

**The Indiana Association for the  
Gifted Presents:**

**A Gifted Education  
Resource Guide for  
Indiana Parents and  
Educators**  
2<sup>nd</sup> Edition

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This guidebook is a project of the Indiana Association for the Gifted as a service to its members and to all educators and parents of Indiana gifted learners. It is published and distributed as a service of the Division of Exceptional Learners, Indiana Department of Education.

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## Introduction

### **The Mission Statement of the Indiana Association for the Gifted**

IAG is a united body of parents, educators and concerned citizens committed to the advocacy and advancement of educational practices and resources which will meet the unique learning needs of gifted/talented students.

This publication is a follow-up to *Gifted Education: An IAG Guide for Parents and Teachers*, published in 1997. This Resource Guide is a compilation of articles, basic lists or advice from experts in the field, recommended resources, places to obtain additional information, and where to ask questions about programs in different regions of the state. This is not meant to be comprehensive, but an introduction to the field. This is a joint project of IAG and the Indiana Department of Education's Division of Exceptional Learners. Some readers are parents whose children have just been identified as having special learning needs associated with their high intellectual potential. Some readers are teachers who have not been specifically trained in the methods of educating gifted/talented learners, but have these children in their classrooms. Some readers are experienced professionals who have worked for many years with and for gifted children.

In addition to projects such as this one, the IAG:

- Publishes *IMAGES*, a quarterly newsletter/journal with articles outlining current practices and trends in gifted education, notifications of speakers or programs of interest to G/T advocates throughout Indiana, and news of the association.
- Sponsors the annual Presents of Mind Resource Show attended by hundreds of parents and educators, and held in recent years at the Children's Museum in Indianapolis in early November.
- Hosts an annual convention with national, state, and local leaders presenting topics of interest to parents, friends, and educators of gifted children.
- Compiles and makes available information regarding summer programs for gifted children throughout the state.
- Follows important developments in the Indiana legislature that may affect gifted education and advocates for appropriate legislative and funding efforts.
- Supports scholarly research about G/T children in school and society.
- Helps support local parent groups.
- Supports efforts to bring speakers on gifted education to groups throughout the state.
- Maintains a website, email address, mailing address, fax and phone line to facilitate communication and the dissemination of information.
- Works with the Indiana Department of Education and other groups to advance opportunities and services for gifted children in Indiana.

The IAG is a not-for-profit corporation. The Board of the Indiana Association for the Gifted thanks the authors or publishers of the included articles for their permission to reprint, the Indiana Department of Education for funding support for this Guide, and you for your support and for your interest in gifted children.

## IAG Membership Form and Information

To become a member of the Indiana Association for the Gifted, please photocopy and complete this page. Questions about IAG should be directed to The Indiana Association for the Gifted, P.O. Box 641, Carmel, IN 46082. Additional information and email addresses can be found at our website: [www.iag-online.org](http://www.iag-online.org).

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### Membership Type

Members receive a copy of *IMAGES, The Quarterly Journal of the Indiana Association of the Gifted* and can attend the IAG Annual Convention at a reduced rate.

\_\_\_\_ \$25 Individual—1 year

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(Institutional Membership includes 2 copies of *IMAGES* per quarter and a reduced rate for 5 people to attend the IAG Annual Convention.)

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### IAG is an organization run by volunteers. Please indicate the area(s) in which you can provide support.

\_\_\_\_ IAG Board

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\_\_\_\_ Parent Information

\_\_\_\_ Preparation of Mailings

\_\_\_\_ Research Committee

\_\_\_\_ Legislation Issues

\_\_\_\_ Professional Development

## Understanding and Nurturing Gifted Children

### The Gifted: An Endangered Species

By Linda Silverman, Ph.D.

*At 2 weeks old Jessica smiled on cue. At 14 months, she spoke in sentences and had a vocabulary of over 250 words. By the age of 2 she could do a 60 piece puzzle. She was so far beyond the other children in her daycare that she became the teacher's helper. At three, Jessie taught herself to read.*

What happens when children like Jessie enter school? Are schools prepared to allow her to progress at her own rate? Unfortunately, too often the answer to this question is no. Jessie is expected to wait patiently while other children learn skills and knowledge she has already mastered. She is implicitly taught to slow down her natural rate of learning to make the teacher and the other students more comfortable. But Jessie pays a price for her social adaptation (Kerr, 1985, 1994). She learns to be less than she can be, to slide by without stretching herself, to deny her talents, and, eventually, to trade her dreams for simpler, less demanding goals. This tragic waste of Jessie's potential affects not only her, but also society, for we have all lost whatever gifts she might have contributed. Instead of teaching to the lowest common denominator, schools need to become a place where individual differences are appreciated, and where talents are recognized and nurtured.

Our society needs Jessica's gifts, and the fully developed abilities of all the other gifted and talented children, in order to actualize its enormous potential as a world leader. However, in recent years, our educational system seems to have lost sight of this fact. We are just beginning to emerge from the mass hallucination of America as "Lake Wobegone" where all children are above average. In some districts, individual differences have become more than inconvenient; they have been legislated out of existence. With all good intentions, the zealots of school reform want all children to be successful in school and to have an equal opportunity to succeed in life. This is an admirable goal. Certainly, we need to be concerned about those children who perform poorly in school. But equal opportunity does not and can never mean equal outcomes without obliterating individual differences and destroying the fabric of American life. We have always been a country of rugged individualists, and our differences have been protected by law. We have strong sanctions against persecution and oppression of people of different religions, races, national origins, and those with physical handicaps, but the gifted are still fair game.

Each time a taunt based on a child's exceptionality (such as 'nerd' or "dweeb") is permitted in the classroom or on the playground, each time a highly gifted child is deliberately held back academically, each time a school policy prohibits academic acceleration or continuous progress, we need to ask, "What messages are we giving *all children* about developing talents, about the value of academic achievement, and about intellectual diversity?" The school climate needs to support all students-including the most gifted. We would never allow racial or ethnic slurs to go on unchecked in today's schools, nor would we deliberately thwart the

intellectual growth of a child with a disability. Yet, profoundly gifted children (and their families) routinely must deal with these issues.... (Kearney, 1993)

### ***The Attack Against Giftedness***

For decades, the gifted have been alternately applauded and neglected, exploited and ignored, mined as a national resource and then forgotten, but never in America's history has its brightest minds and their advocates endured such unbridled attack as in the last few years. Witness the publication of George's (1992) *How to Untrack Your Schools*, by the Association for Supervision and Curriculum Development (ASCD)--the main organization of educational administrators, or Margolin's (1993; 1994) *Goodness Personified--The Emergence of Gifted Children*, or Sapon-Shevin's (1994) *Playing Favorites - Gifted Education and the Disruption of Community*. All three of these reformers link gifted education with racism, elitism, and economic caste systems. Sapon-Shevin (1994) tells us that "gifted programs provide a way to resegregate schools without requiring people to move" (p. 35). Margolin (1994) would have us believe that giftedness is a social construction to maintain hierarchical power relations in our society. George (1992) admonishes that "all students should be deemed worthy and capable of learning everything the school has to offer" (p. 4), which implies that the offering of subjects suited for advanced students, such as Latin, calculus, or the study of Shakespeare, would automatically make some students feel unworthy. George's ideas are being implemented in a middle school in Gainesville, Florida, where all seventh graders take algebra together, even if some have not mastered addition and others are ready for calculus. What's wrong with this picture?

Most opponents of gifted education believe that the majority of children labeled "gifted" are economically advantaged. In reality, the gifted come from all social classes (Dickinson, 1970), and poor children have less opportunity to achieve academic success. While the percentage of gifted students among the upper classes may be higher, *there is a much greater number of gifted children among the lower classes* (Zigler & Farber, 1985), because the poor far outnumber the rich. If we abandon gifted programs, gifted children from culturally diverse groups and low socioeconomic circumstances will be the ones to suffer most. Affluent parents can send their children to private schools or some two-parent families can opt to homeschool their children. But the majority of gifted children will not have those options. These children are prevented from fulfilling their potential when public school provisions for the gifted are eliminated. Instead, greater efforts must be made to include bright children from all socioeconomic classes in gifted programs.

The claim that special services for gifted students create elitism also is unsupported by research (Newland, 1976). Elitism is a function of *socioeconomic* differences, not intellectual ones. In teaching and counseling gifted students, I have found that feelings of inferiority in the gifted are much more prevalent than feelings of superiority. Those children who act superior usually feel isolated and use their verbal abilities as a defense against the rejection of their agemates. Separating gifted students from each other and ignoring their needs actually fosters elitism to a greater extent than congregating them for advanced instruction. Students who are the smartest in their class for 12 years, never crack a book or take home homework, and ace all the tests without studying, can get a ballooned sense of their own importance and place in the universe. When gifted students are placed in classes



together, they do not come to the conclusion that they are "better than everyone else." Rather, they are *humbled* by finding peers who know more than they do. "Conceit was corrected, rather than fostered, by the experience of daily contact with a large number of equals" (Hollingworth, 1930, p. 445).

Much of the fear of elitism is based on the assumption that if individuals discover that they are unusually able, they will develop aristocratic values, caring little for the plight of others. However, research indicates that exactly the opposite is true. Giftedness often is accompanied by a strong sense of responsibility, empathy, moral concern and compassion (Dabrowski, 1972; Hollingworth, 1942; Marland, 1972; Passow, 1988; Terman, 1925; Ward, 1985). The gifted in our country are the backbone of social reform and egalitarianism. They care desperately about injustice (Roeper, 1988). Programming for gifted students enhances these higher values, rather than creating an aristocracy.

### ***Why We Need Gifted Education***

Why do we need gifted education? Because gifted children exist and they will continue to exist despite their unpopularity. In fact, there are more and more gifted children being born each day, and we have a moral obligation to meet their needs. They need the opportunity for continuous progress; this as a basic educational right. *All children have the right to learn new concepts in school every day.*

Because, despite clichés to the contrary, many gifted children do *not* make it on their own. Some become dropouts (Marland, 1972), delinquents (Seeley & Mahoney, 1981), underachievers (Supplee, 1990, Whitmore, 1989), depressed (Kerr, 1991) and victims of suicide (Delisle, 1990). For every child with recognized gifts, still another goes unrecognized (Dickinson, 1970). Gifted children may have learning disabilities or other handicaps, and these dual exceptionalities tend to mask each other so that the child appears average (Silverman, 1989). Unrecognized and undeveloped talents may be lost permanently. The potential concert violinist must have a violin and continuous nurturing of this ability to fulfill its potential.

Because giftedness does not develop in a vacuum. We have romanticized the "self-made man," but research indicates that native ability requires considerable cultivation to develop fully (Bloom, 1985; Feldman, 1986). We cannot know how much talent has been lost for lack of discovery and development, nor can we assess the magnitude of that loss to our society--the music that was never composed, the medical cure that was never discovered, the political strategy that might have averted a war.

Because eliminating programs for the gifted is as unethical as eliminating programs for the mentally handicapped. If children who are developmentally advanced had the same protection under the law as children who are developmentally delayed, it would also be illegal. It is unrealistic to expect a regular classroom teacher to teach one child addition and another precalculus. Yet, children of the same age may differ to that degree in their development. Special programs are essential for the welfare of children with special needs.

Because our democracy, as well as our position as a world leader, is being endangered by substituting socialization for education. While other countries enable their brightest students

to go as far as possible in their learning, we have adopted the notion that one curriculum fits all, and are using our most capable students to serve as assistant teachers instead of allowing them to progress and develop their abilities. It is misguided to believe that holding back the brightest students magically helps the slower ones; *bringing the top down does not bring the bottom up*.

### ***Gifted as Asynchrony***

With all of these arguments, it is still difficult to dissuade vocal opponents of giftedness when giftedness is defined as high achievement in school or the potential for recognized accomplishment in adult life. The fact is that achievement is very much a function of opportunity (Hollingworth, 1926), and greater opportunities for success are available to those who have greater financial resources. Achievement, particularly recognized individual achievement, is culturally determined (Silverman, 1997).

Another way of understanding giftedness is to see it as developmental advancement. In every culture, there are children who develop at a faster pace from early childhood on, are inquisitive to a greater degree than their agemates, generalize concepts earlier than their peers, demonstrate advanced verbal or spatial capacities at an early age, have superb memories, grasp abstract concepts, love to learn, have a sophisticated sense of humor, prefer complexity, are extraordinarily insightful, have a passion for justice, are profoundly aware, and experience life with great intensity. While these traits may or may not propel the individual to world renown, they appear to correlate with moral sensitivity in childhood (Silverman, 1994).

This alternative way of perceiving giftedness has been captured by the Columbus Group in the following definition:

Giftedness is asynchronous development in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm. This asynchrony increases with higher intellectual capacity. The uniqueness of the gifted renders them particularly vulnerable and requires modifications in parenting, teaching and counseling in order for them to develop optimally. (The Columbus Group, 1991)

Internal asynchrony is due to differences in rates of physical, intellectual, emotional, social, and skill development in the gifted child. Uneven development is mirrored in external adjustment difficulties since the gifted person often feels different from, or out of place with, others. External asynchrony, then, is the lack of fit of the gifted child with other same-aged children and with the age-related expectations of the culture.

Uneven development is a universal characteristic of giftedness. Gifted children, in any cultural milieu, have greater discrepancies among various facets of their development than average children (Silverman, 1993a; 1994). The clearest example of this unevenness is the rate at which mental development outstrips physical development. Binet constructed the *mental age* as a means of capturing the degree to which a child's mental abilities differ from those of other children his or her chronological age (Binet & Simon, 1908). The concept of

mental age has proved enormously helpful in our understanding of retardation. We recognize the inherent difficulties of having a 17-year-old body with a 9-year-old mind. However, we still do not understand that it is equally problematic to have a 17-year-old mind trapped in the body of a 9 year old. This type of asynchrony doesn't arouse much sympathy.

A child's mental age predicts the amount of knowledge he or she has mastered, the rate at which the child learns, sophistication of play, age of true peers, maturity of the child's sense of humor, ethical judgment, and awareness of the world. In contrast, chronological age predicts the child's height, physical coordination, handwriting speed, emotional needs, and social skills. The greater the degree to which cognitive development outstrips physical development, the more "out-of-sync" the child feels internally, in social relations, and in relation to the school curriculum.

The situation becomes even more complicated when it is understood that psychologically the child is an *amalgam* of many developmental ages (Tolan, 1989) and may appear to be different ages in different situations:

In terms of development chronological age may be the least relevant piece of information to consider. Kate, with an IQ score of 170, may be six, but she has a 'mental age' of ten and a half... Unfortunately, Kate, like every highly gifted child, is an amalgam of many developmental ages. She may be six while riding a bike, thirteen while playing the piano or chess, nine while debating rules, eight while choosing hobbies and books, five (or three) when asked to sit still. How can such a child be expected to fit into a classroom designed around norms for six year olds? (p. 7)

The asynchrony that besets the gifted is both a blessing and a curse. If we view giftedness only within a competitive framework, then the most gifted among us are certainly the most cursed, because they cannot fit into society as it currently is, nor can they succeed by its standards. They are likely to be seen as defective in today's world; they lack the competitive drive to win and they cannot comfortably "play the game" at school or work, ignoring the power plays and moral infractions. Advanced, asynchronous development is not an advantage in a race toward personal gain. It does not give the individual an edge in the competition. Rather, the cognitive and personality traits that comprise giftedness are disadvantages in a society in which those differences are not valued.

We need to see beyond the narrow lens of competitiveness to grasp the deeper significance of giftedness. When we look at the gifted from a global perspective, it is clear that the development of each person's gifts benefits all of society. Every human being has a unique contribution to make to the whole. Kierkegaard has been quoted as saying that we all come into this world with "sealed orders" and we each must discover what those orders are and follow them (Tolan, 1995). Everyone's orders are different. What is the point of competing if we all have a different role to play? Gifted individuals come equipped with the exact combination of unusual strengths and weaknesses--the perfect asynchrony--to fulfill their own sealed orders. We, too, who have been called to help these children develop, have been given very sacred orders of our own. We know that some of the children in our care have come to lead us to a more humane, harmonious existence. We who cherish gifted children

have been entrusted with guiding and guarding the future of our planet. With our help, these children's gifts will become blessings to themselves and to the Universe.

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This excerpt is used with the author's permission. It was the keynote address at the Eleventh World Conference on Gifted and Talented Children in Hong Kong and presented at the Indiana Association of the Gifted Conference May, 1996.

Illustrations of degrees of asynchronous development, dual exceptionalities, and heightened sensitivities are included in the full-length document.

Silverman, L.K. (1995). Gifted and talented students. E. L. Meyen & T. M. Skrtic (Eds.), *Special Education & Student Disability: An Introduction* (4th ed.) (pp. 377-413). Denver.

## **Guiding and Supporting Development of Gifted Children**

By Tracy Cross

Having spent several years conducting research, working directly with gifted students in the role of teacher, counselor and program director and reading others' studies on the topic of the social and emotional needs of gifted students, I have come to believe that there are several strategies that will help parents, teachers and counselors guide gifted children.

Some of the topics have a substantial research base; some have only a modest research base; and some have little to no published research base supporting them. Cutting across these ideas is a form of conventional wisdom which is primarily due to the fact that our professional experiences become our primary source of data as we try to make sense of the world.

Although I believe there is danger in relying too much on personal experiences when making generalizations, I do respect the fact that drawing on multiple forms of data, including personal experience, is an appropriate method for making informed decisions. So, to break with my past practice of trying to only forward ideas that have emerged from published research findings, I am going to provide a partial list of ideas that I believe have merit when trying to guide gifted children.

Consider these ideas for teachers, counselors and parents who guide the social and emotional development of gifted children:

1. As you consider your role in the development of a gifted child, realize that your best efforts cannot prevent all the struggles and emotional turmoil from occurring in the child's life. Your efforts may, however, allow the child to effectively transcend the difficulties associated with youth and particularly those issues unique to gifted children.
2. Remember that the gifted child is a child first. Adults often forget that the young person they are dealing with is, in fact, a child. It is difficult to remember when listening to gifted children talk about academic topics that he or she is very likely to be at the same general developmental level in the social and emotional domain as nongifted peers. Treat children as young people first and deal with their specific gifts second.
3. Communication among the three groups of adults (parents, teachers, counselors) is vital. Each group needs a clear understanding of the child and the parents' and teachers' goals for the child. These three groups of adults often have different goals for the students. Consequently, it is important to share appropriate information.
4. Try to understand the social milieu of the school, or the classroom, through the eyes of the child. This is a difficult task, but well worthwhile. I have been astounded and dismayed by the extent to which the social expectations for students are never openly discussed or understood. Often the teacher and other school personnel have quite divergent views of what it means to be a student or a gifted student. Moreover, students also hold a wide variety of opinions about what they think being a student means and how they should behave in various school settings. Therefore, talking

openly about the expectations for students can help them feel more comfortable in the school.

5. Serve as a clearinghouse for information about gifted students. Share the information via meetings and by sharing literature. Since none of the three groups of adults (parents, teachers, counselors) receives significant training on the nature and needs of gifted students, it is important to create opportunities for them to learn how to be proactive in the child's life. The ERIC Clearinghouse has invaluable information prepared for this purpose. Other sources of information include local colleges and universities, state agencies, the National Association for Gifted Children, the Association for the Gifted and the Internet.
6. Make available individual, group and family counseling for gifted students and their families. Although relatively easy to organize, it is rarely done. If this is difficult to arrange, then share materials with each group as a means to better prepare the various professionals who work with gifted children.
7. Learn about the child's personality and social goals. This will enable all three groups to guide the child through the school years. When pursuing this strategy, be sure to include information from the field of "general" psychology. The vast majority of facts within the field of psychology are applicable to the lives of gifted students.
8. Teach the child to better understand his or her nature and anticipate how to react to events and circumstances in his or her life. Part of this understanding may be accomplished through personality and interest inventories. Astute adults in positions to provide observationally based information may also be very helpful to the child. This strategy calls for three groups of adults to work together.
9. Provide opportunities for gifted children to be together. This opportunity seems to alleviate some of the pressures a gifted child feels. For example, gifted students often report feeling different from other students, except when they have time to be together. When together, they often comment on the profound sense of relief of knowing there are other people like themselves who have many similar interests and qualities.

## **Part Two**

1. Recognize and respect the relationship between social and emotional needs and academic needs. One affects the other. For example, whether a gifted student is challenged or able to work at a pace that is stimulating can affect his or her emotional well being. Our school psychology clinic at Teachers College at Ball State University has documented that the most common reason gifted students are referred for psychological assessments is rooted in their becoming a behavior problem in school after having previously been a very strong student. The root of the behavioral change is the manifest frustration with not being challenged in school. For many students, this connection goes unnoticed until it is far too late to help them.
2. Be cautious about forcing your desires on students based on your perception of their strength areas. Talent manifests over time and with opportunity. Determining for a child what his or her "gift" or "talent" is without allowing for flexibility or encouraging additional self-exploration may cause a number of problems from adolescence on. A positive outcome of nurturing a talent is the development of a lifelong avocational interest or hobby.



3. Teach pro-social skill development. Teaching gifted students a handful of social skills can reduce the number of negative experiences they may encounter while in school. The phrasing of questions and comments and the ability to take another person's perspective are skills that are helpful in teaching gifted students to navigate the difficult social waters in schools.
4. Teach them to enjoy nonacademic activities. As appropriate, try to teach gifted students to recognize that nonacademic pursuits are also important in one's life. They become stress relievers and additional areas where gifted students can grow. Modeling works well in teaching this lesson.
5. Teach gifted students ways to manage stress. As they move through the grades, for many, they will experience growing amounts of stress. Ironically, much of this will be self-imposed, or a consequence of being treated as gifted by others. Because many gifted students develop coping strategies, educating them about how to effectively manage stress may prove relatively easy.
6. To accomplish many of the suggestions previously noted, adults should model the behavior they wish gifted students to exhibit. Like all children, gifted students learn from the behavior of adults. Whether it is effective coping strategies, non-threatening communication techniques or how to relax; teachers, counselors and parents often become the models that children follow. If you want your messages to be influential, let the students see you behaving accordingly.
7. Understand that much of how gifted students appear and behave is biologically affected - do not try to change the basic nature of the student. Shyness, for example, like some physical characteristics, has roots in biology. Like the relationship between body type and weight, shyness and a student's willingness and ability to actively participate in class are related. Respect the nature of the individual gifted child.
8. Embrace diversity, do not merely tolerate it. To tolerate suggests a position of authority or position of judgment that allows someone to decide what human differences are meaningful and therefore acceptable, and what differences are intolerable. This special privileged position tends to disadvantage gifted students because giftedness rarely makes peoples' list of meaningful differences. As a teacher, parent or counselor, you are in a position to have a significant impact on the minds of gifted children. If a school truly embraces diversity, then gifted students will be accepted. In many schools, giftedness is still experienced as being aberrant. In a study a few years ago, I found that gifted students are just as prone to believe stereotypical ideas about other gifted students as the general population. This phenomenon can be explained by the fact that gifted students can not escape their environment.
9. Expose gifted students to knowledgeable counseling - avoid professionals who are not knowledgeable about gifted students. A proactive counseling program can be invaluable to gifted students. Learning about oneself and how to effectively relate to others in school can positively affect the psychological development of gifted students. Conversely, messages learned from untrained counselors and psychologists who rely on intuition when providing services can actually exacerbate problems in the social and emotional realm.
10. Know that many gifted students will have created coping strategies while in the earliest grades in school. I have found that by first grade some gifted children have begun to engage in behavior patterns that reveal that they are not comfortable with the gifted student label. Some of these strategies reflect their tacit knowledge about the

social milieu of their classroom. Knowing that these patterns exist can enable teachers, counselors and parents to understand the worries and behaviors surrounding gifted students' school experience.

11. Provide opportunities for down time. All children need time to relax, to be away from school concerns. Arranging down time for some students will come easy, but for others it will be quite difficult. Providing gifted students opportunities to explore or read for pleasure can reduce stress and may have the positive effect of increasing avocational pursuits when they get older.

### **Part Three - Working on Behalf of Gifted Students**

Some of the ideas are reasonably well researched, while others are rooted in my professional experiences. A number are somewhat specific to gifted students while others might be as effective with students of average ability. Some of the ideas respect biological influences while others emphasize environmental influences in this area. Implicit in the suggestions is the assumption that the lives of gifted students in schools can be better if the three groups (teachers, parents, counselors) communicate about the students. Clearly, only some of the ideas expressed across the series will be relevant for any specific student given his or her particular circumstances in life. Consequently, the groups of adults need to assess the salience of the ideas before attempting to pursue them.

1. The first suggestion is to encourage controlled risk taking. Although it may seem on the surface to be an oxymoron, it really is not. Imagine the lives of professional stunt men and women. People who earn a living by risking their lives do so with careful planning. They take obvious risks to their physical well being, but they do so after great effort has gone into building safety nets that minimize the potential for their harm. Similarly, gifted students need to take risks to build same and opposite sex friendships and communicate with other students and teachers. To engage in this type of social risk taking, safeguards need to be in place. Parents, teachers and counselors can create those safety nets with preparation. For example, building an accepting environment in a classroom and school establishes a climate that supports emotional and social risk taking. This suggestion dovetails into the next one.
2. Provide myriad social experiences for gifted students. In concert, the three groups of adults can orchestrate varied situations where gifted students interact with a wide variety of people. These types of experiences will build social skills specific to contexts and have the effect of developing the gifted students' social cognition. As the students have positive experiences, their self-concepts will also be enhanced.
3. Inventory family similarities and differences as compared to schoolmates. In some school settings the diversity is obvious, while in others it is not. It can be helpful to gifted students for their parents, particularly, and teachers and counselors less so, to let them know what their family's values, practices, and beliefs are, and how they vary across groups of people. If done within the context of diversity, then their giftedness can be accepted as quite normal, rather than aberrant.
4. To accomplish the third suggestion, one approach is to encourage the reading of biographies of eminent people. This is considered a form of bibliotherapy. The details provided in the biographies will often cause two events to occur. The consciousness of the gifted student will be raised as to the experiences the eminent person had that impacted on his or her development. For example, some of the scientists in Germany

prior to World War II speak about their lives as Jews during the rise of Hitler and the strong anti-Semitism that pervaded Germany. The second event that often occurs is the combination of comparing the reader's life with that of the person in the biography, and then the awareness that many highly accomplished people also struggled with some of the same issues affecting the reader's life. This realization tends to reduce feelings of isolation while at the same time providing ideas for dealing with the difficulties gifted people encounter. Part of the potential effectiveness of the bibliotherapy approach is that the reader engages and creates his or her understanding. This is a vastly different experience than having one's parent discuss issues with you. Although both reading biographies and discussing with parents can be successful, using both approaches may prove more beneficial than relying on only one.

5. A second approach for educating about diversity is to provide mentorship opportunities for gifted students. Apprenticeships can have many positive effects, including numerous ones in the skill building domain. In this example, it is important to note the connection with the life story aspect of psychological development. For example, working with a mentor teaches many lessons including who is the mentor and what pathway he or she followed to become what they are from the mentor's own perspective. Through this person's life story, salient issues in the individual development of the mentor can be recognized and understood by the gifted student. Like the effects of bibliotherapy, connecting with a significant adult who represents an academic area of interest of a gifted student offers many opportunities for the gifted student to appreciate and navigate the social and emotional waters of his or her life.
6. Love and respect gifted students for who they are. Then, emphasize doing rather than being. Ability and talent are neutral constructs while doing is virtuous. Try to help them understand that being academically able does not make a person good or bad, per se. Rather, like many characteristics one has, it is how one strives to develop, and subsequently use other abilities, that makes him or her virtuous. It is important both for gifted students and others that they develop their talents. Moreover, avocational talent is important, too. The overemphasis by the three groups of adults on the students' abilities tends to create feelings by gifted students that they are nothing but their academic ability or achievement. This can lead to myriad problems like underachievement, unnecessary suffering when doing poorly in school, the unwillingness to stretch beyond areas of prior attainment and identity foreclosure. Identity foreclosure is the result of deciding at too young an age where to emphasize one's professional aspirations. Deciding to pursue math as a career because early in one's life a person is taught that they are particularly able in that area will often lead to the student choosing not to risk failure in other areas. Hence, potential talent areas are never identified. Negative patterns within careers also exist for many who decided about their career too early in life.
7. Encourage a self-concept that extends far beyond the academic self-concept. It is never beneficial to a gifted student to convince him that only academic achievement is valuable. What good is a person to society who can calculate advanced math problems at an early age, but who has developed no civic responsibilities. Although I do not accept the claim that schools should attempt to develop equally the "whole" person, I do believe that gifted students should be appreciated as children who

develop over time and consequently deserve the rights to develop various aspects of their being. As in every preceding example, the three groups of adults need to work together for this suggestion to be realized.

Teachers, parents, and counselors should recognize the important roles they play in the psychological development of gifted students. Gifted students will develop with or without adult guidance. The question is "How will they develop without coordinated guidance that is underpinned by research in developmental psychology and informed research on gifted students' lives in school?" My answer is that it is inconceivable that they can develop as well and as painlessly without the support of the three groups of adults. Let us commit to supporting the psychological development of all students, including gifted students.

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## What Childhood Traits Predict Adult Success?

By Herbert J. Walberg, Ph.D. and Edward A. Wynne, Ph.D.

Successful people - those with recognized achievements - have been studied for centuries. Walberg and Wynne (1994), distilled the research on successful adults and found five traits that are highly predictive of adult success and eminence. They are:

1. **Hard Work.** The authors describe the notion of "workaholic" and all its negative connotations as an invention of the 20th century and go on to describe how society used to value extremely hard work. Successful adults were children who were unafraid of hard work.
2. **Personal Knowledge.** There is no doubt that successful people are well-informed in a variety of areas and can easily apply knowledge from one field to another. Walberg and Wynne caution against regarding retrieved information as personal knowledge and forward the idea that personal understanding is the ability to make immediate associations from large and varied knowledge bases.
3. **Support and Criticism.** Successful adults had "strong support and significant criticism" as children. Polite, universal acceptance of children's responses reduces their ability to apply logic and to figure out the world. Children's views should be challenged. Children should be allowed to test their mettle by close monitoring, criticism and personalized support.
4. **Making and Keeping Commitments.** How do children learn to choose goals they should pursue? Walberg and Wynne stated that "classrooms provide few opportunities for students to commit themselves to wise, arduous goals" and that children need lots of chances to learn how and when to commit their energies.
5. **Successfully Completing Difficult Tasks.** Finishing meaningful work results when one makes wise choices and persists in those choices. The authors made a case for allowing children to develop specialized talents at a young age instead of the popular notion of enduring long periods of school to prepare for "real life." They encouraged difficult tasks at home and school that require realistic long-term goals.

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## **Meeting Parents' Needs**

By Patricia King Rash

Most parents of gifted children have a natural ability to rear their offspring because of their own giftedness. However, that ability does not negate the fact that parenting a gifted child is a mixed blessing that presents unusual circumstances (Silverman, 1997). Parents of gifted children have a more complex task than parents of non-gifted children, because they have to deal with the giftedness as well as the natural childishness in their progeny (Cornell, 1984). They may even feel different from other parents because of the challenges their children present (Saunders & Espeland, 1986). Parents of newly identified gifted children frequently hope for some kind of guidance, because they are convinced that they cannot cope and deal with feelings of inadequacy (Bridges, 1973). Because of their particular expertise, teachers are able to assist parents of capable children in meeting many of their unique needs. Teachers often have some of the following knowledge that may be helpful in providing answers to a problem that concerns a parent.

### **Characteristics**

Parents need to be aware of the characteristics of gifted children that differ from those of same-age normal children. Gifted children walk, talk, and understand earlier than other children. They may display motor abilities beyond what is normally accepted for a child at an early age. They frequently use more words, display a greater attention span, use more complex sentences, and exhibit speedier learning. They may also have a more intense need for books, and use toys and tools in a larger variety of ways and with more complexity. They are sometimes able to decipher codes, patterns, and puzzles, create play activities, and demonstrate deeper understanding of questions and answers from grown-ups (Smutny, Veenker, & Veenker, 1989). Some gifted children exhibit an early interest in time, others use abstract reasoning and have a sharp sense of humor (Silverman, 1997). Oftentimes they show extraordinary alertness and insatiable curiosity, and some are more comfortable in the company of adults (Takacs, 1986). They may ask a barrage of questions, have very intense activity levels, need less sleep, have excellent memories, and suffer from asynchronous development (Walker, 1991).

### **Identification**

Parents need to know that it is vital for gifted children to be identified early to enable early intervention, just as it is important to identify handicapped children early (Silverman, 1997). Parents should have an understanding of the various methods of identification that are used in the field of gifted education, such as intelligence and achievement tests; teacher, parent, or peer nominations; creativity assessments; evaluation of products or performances; grades; and task commitment (Walker, 1991). Some districts apply alternative evaluations, such as performance-based, authentic, and portfolio assessments. In addition, there are different models that may be used with diverse populations, such as Gardner's (1983) Theory of Multiple Intelligences, Maker's (1996) DISCOVER approach, and Frasier's (1997) Frasier Talent Assessment Profile (F-TAP Model).

### **School Options**

Teachers can provide information that will help parents better understand school options, such as public, private, and magnet schools, or advanced placement, honors, and gifted

education programs. To promote the best education for their gifted children, teachers can give parents an understanding of the nature of a differentiated curriculum and whether or not gifted students in their district are receiving that accommodation. They should be made aware of the availability of gifted programs, acceleration, early entrance, grade placement, and home schooling. They need to be knowledgeable about after-school enrichment programs, the availability of early college entrance, the possibility of simultaneous enrollment in high school and college, and whether internships, mentorships, and scholarships are available (Silverman, 1997).

### **Advocacy**

Parents can be taught to appropriately advocate for their gifted children. They have both a right and a moral obligation to be involved in their child's education, and they may do so by being either proactive or reactive. With the teacher's support, parents will choose to be proactive by forging a relationship with the school, anticipating needs, and preventing problems before they arise (Saunders & Espeland, 1986). Teachers can encourage parents to help their schools make changes through proactive behaviors, such as volunteering to work on specific projects, participating in parent groups, supporting state legislation, and taking part in fund raising activities. Reactive advocacy should be used only when all the proactive steps do not work out to the parents' satisfaction (Marland, 1981). When parents are faced with school districts that deny legal rights, they should think about and decide whether to become reactive. Many of those issues are discussed in books by Karnes and Marquardt (1991 a, 1991b, 1991c).

### **Myths**

It is important that parents know fact from fiction, both for their own understanding and to help quash myths that have surrounded gifted students throughout history. There was even an ancient theory that giftedness was related to insanity, a concept that was invalidated by the Terman studies whose results found that gifted individuals were well adjusted (Gallagher, 1997). In fact, research implies that bright people tend to be more stable than the general population (Walker, 1991). Gifted children are often thought to be weak and unhealthy, but that is not true. They are considered to be oddballs, but the fact is that teachers frequently fail to identify them because they seem so normal. They are widely seen as bookworms, but they engage in all types of activities and interests. The myth holds that gifted kids all love school; however many are bored and too many drop out. It has been believed that gifted students are only from upper-middle class, Anglo, and professional families, but the truth is that gifted children are found in all cultures and at all socioeconomic levels. Some consider it fact that most gifted children suffered from early ripe, early rot; in reality, outstanding successes can usually be achieved only when they are identified early and their giftedness is nurtured. As a group, gifted kids are believed to be social misfits; but to the contrary, they enjoy social situations. It is thought that their play interests and activities are different from that of peers, but they are usually the same as those of their age mates, though perhaps with added complexity. They have been pictured as egotistical and snobbish, but most possess positive personality traits. It has been thought that many fail to adjust socially in college because they were accelerated as children, but current studies support that, unless the acceleration was excessive, most make very good social adjustments in college (Kasen & Milne, 1992). And finally, we want to be certain we make parents aware that, although it was and sometimes still is believed that gifted children do not need special help, it is now known that to be

successful, most gifted children need accommodation (Lightcap, 1985). Parents should be encouraged to actively seek the appropriate accommodation for their gifted child.

### **Misunderstood**

Parents of gifted kids must be prepared to be misunderstood and undervalued. "Any exceptionality places a heavy burden of responsibility on the parent, but parents of gifted children have the added stress of being continuously discounted" (Silverman, 1997). Instead of being applauded for their support, parents of gifted children must constantly be on guard to protect themselves from abuse. Parents often are accused of elitism when they are merely seeking appropriate education for their gifted children (Walker, 1991).

### **Organize**

Parents of the gifted often experience feelings of aloneness. "The best way to stop feeling isolated is by joining a group of parents with similar concerns" (Saunders & Espeland, 1986, p. 42). The importance of participating in parent organizations is worth stressing to parents (Rimm, 1994; Walker, 1991).

Organizing gives them the opportunity to share problems, experiences, and joys with one another. It helps their ability to bring about needed change within the school system, organize group activities for their children, and influence lawmakers (Takacs, 1986). Since gifted children are in the minority, appropriate programming for them will be provided only where there is a "vocal and visible support group" (Davis & Rimm, 1985, pp. 374-375). Parents should create or join a parent organization as a statement that their gifted offspring are valued and that they champion education and cultural growth. According to Clark (1997), parents should "organize first, then become informed" (p. 177). Educators can play a vital part in the education of parents by suggesting that they participate in a local, state, or national organization, and by providing them with relevant information. Some authors have published the names and addresses of such advocacy groups: Rimm (1994); Robinson, (1993); Walker (1991); Smumy, Veenker, and Veenker (1989); Saunders and Espeland (1986); Takacs (1986); and Kerr (1985).

### **Burnout**

Parents should be encouraged and commended when they do things they like doing, as well as things in which their children are interested (Clark, 1997). The parents' social and emotional lives should not be ignored, and they should have their own hobbies and interests. They should take time to be creative, think calming thoughts, have adult friendships, and seek and accept help when it is needed. Parents need support from other parents of gifted children in order to avoid burnout (Walker, 1991). They should have strategies for taking care of themselves, lest they lose their zest. Teachers can influence parents to set realistic goals, take a break from their children once in a while, look for the humor in life, start new activities, and get help when necessary (Saunders & Espeland, 1986).

### **Resources**

Educators can provide parents with the sites of on line resources that supply general information about gifted children, their education, and parenting. The Internet has hundreds of listings. The National Research Center for Gifted and Talented (NRCGT) has a web site that may be contacted at the following address: [www.ucc.uconn.edu/~wwwgt/nrcgt.html](http://www.ucc.uconn.edu/~wwwgt/nrcgt.html). It



provides abstracts of current research findings in gifted education and information about how to obtain NRC/GT's published material. Many on line sources are interactive, providing an opportunity for questions and answers. Current technology should not be ignored as a valuable resource. Educators may assist parents by making them aware of special meetings, programs, conferences, workshops, and seminars. They can also provide conferences for parents that are responsive to specific needs. Provide for at least one activity that ensures parents meet with one another to build their support network. Keep the admission charge free or low enough for all parents to attend. Be sure the location is central, and the meeting date and time are well publicized. Assure that the atmosphere is informal, but professional. If at all possible, provide child care. Follow-up is very important and may be done through newsletters, lectures, telephone trees, or even through simple mail-outs of relevant information. Most parents are not aware of the many journals and other written materials that may be of value to them. Teachers can provide that information. These authors include lists of recommend books: Rimm (1994); Silverman (1993); Alvino and the Editors of Gifted Children Monthly (1989); Smumy, Veenker, and Veenker (1989); Saunders and Espeland (1986); and Takacs (1986). It is a good idea for teachers to create and distribute their personally recommended reading lists as well. A frequently neglected resource is the publishers of materials for and about gifted children. They will happily send multiple copies of their catalogs and flyers for distribution to parents and groups. Prufrock Press, Free Spirit Publishing, and Gifted Psychology Press are only a few of the publishers who are more than willing to accommodate teachers and parents who request catalogs.

### **Summary**

Parents needs have often been neglected. They frequently feel alone and confused, and they regularly receive incorrect advice from well-meaning, but ill-advised sources. Educators can provide parents with knowledge about the characteristics of gifted children, how they are identified, and whether they are being educated appropriately. Parents can learn the best ways to work with the school in their efforts to support gifted education. They can organize and participate in support groups. And finally, teachers can encourage them to get involved in activities that meet their personal needs that are unrelated to the needs of their children.

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## **Helping Your Highly Gifted Child**

By Stephanie Tolan

Most parents greet the discovery that their child is not merely gifted but highly or profoundly gifted with a combination of pride, excitement, and fear. They may set out to find experts or books to help them cope with raising such a child, only to find that there are no real experts, only a couple of books, and very little understanding of extreme intellectual potential and how to develop it. This digest deals with some areas of concern and provides a few practical suggestions based on the experience of other parents and the modest amount of research available.

### **DIFFERENCES**

To understand highly gifted children it is essential to realize that, although they are children with the same basic needs as other children, they are very different. Adults cannot ignore or gloss over their differences without doing serious damage to these children, for the differences will not go away or be outgrown. They affect almost every aspect of these children's intellectual and emotional lives.

A microscope analogy is one useful way of understanding extreme intelligence. If we say that all people look at the world through a lens, with some lenses cloudy or distorted, some clear, and some magnified, we might say that gifted individuals view the world through a microscope lens and highly gifted individuals view it through an electron microscope. They see ordinary things in very different ways and often see what others simply cannot see. Although there are advantages to this heightened perception, there are disadvantages as well. Since many children eventually become aware of being different, it is important to prepare yourself for your child's reactions. When your child's giftedness has been identified, you might open a discussion using the microscope analogy. If you are concerned that such a discussion will promote arrogance, be sure to let the child know that unusual gifts, like hair and eye color, are not earned. It is neither admirable nor contemptible to be highly gifted. It is what one does with one's abilities that is important.

### **A UNITED FRONT**

As in most other aspects of parenting, it is important for both parents (or the adults who bear primary responsibility for raising the child) to agree on some basic issues regarding the child's potential. Some parents of exceptionally gifted children were themselves gifted or exceptionally gifted children. If they did not learn to accept and understand their own giftedness, they may find it difficult to accept their child's unusual capacities. Raising a highly gifted child may help parents come to terms with many difficult aspects of their own lives, but it helps if they focus first on the needs of the child and come to an agreement about how to meet them.

## **WHAT HIGHLY GIFTED CHILDREN NEED**

Exceptionally gifted children have two primary needs. First, they need to feel comfortable with themselves and with the differences that simultaneously open possibilities and create difficulty. Second, they need to develop their astonishing potential. There is a strong internal drive to develop one's abilities. Thwarting that drive may lead to crippling emotional damage. Throughout the parenting years, it is wise to keep in mind that the healthiest long-term goal is not necessarily a child who gains fame, fortune, and a Nobel Prize, but one who becomes a comfortable adult and uses gifts productively.

## **THE EARLY YEARS**

Before your child begins formal schooling, differences can be handled by your willingness to follow the child's lead and meet needs as they arise. It is possible and important to treat an infant's or toddler's precocity with a degree of normalcy. For example, a 2-year-old who prefers and plays appropriately with toys designed for 6-year-olds should be given those toys. The 3-year-old who reads should be given books. The child who speaks very early and with a sophisticated vocabulary should be spoken to in kind.

## **PUBLIC ATTITUDES**

Even when parents can take precocious achievements in stride, friends, family, and strangers may not. Unthinking people will comment (often loudly and in front of the child) that a 2- or 3-year-old who sits in the grocery cart reading packages aloud is a phenomenon.

It may be surprisingly difficult to avoid letting parental pride lure you into encouraging your child to "perform" in public. Keep in mind the goal of making the child as comfortable as possible with individual differences. The more casually you accept unusual early accomplishments, the more your child will be able to see those accomplishments as normal. Later, when gifts are not quite as noticeable, the child will no longer feel that what made him or her valuable has somehow been lost.

## **MULTIPLE AGES**

Highly gifted children are many ages simultaneously. A 5-year-old may read like a 7-year-old, play chess like a 12-year-old, talk like a 13-year-old, and share toys like a 2-year-old. A child may move with lightning speed from a reasoned discussion of the reasons for taking turns on the playground to a full-scale temper tantrum when not allowed to be first on the swing. You can help yourself maneuver among the child's ages by reading about developmental norms (Gesell is a good guide) so that you are ready for (and avoid punishing) behavior that, although it seems childish in a precocious child, is absolutely age appropriate.

## **SCHOOL**

If your 9-month-old begins speaking in full sentences, you probably will not tell the child to stop and wait till other 9-month-olds catch up. You would not limit such a child to using nouns because that is as much speech as most 9-month-olds can handle. However, in public or private school that may be the approach some educators use.

It is important to realize that they are not purposely setting out to keep your child from learning, although that might be the effect. Many educators have never knowingly dealt with

a highly gifted child. They do not recognize them, and they do not know how to handle them. Some educators base teaching methods on developmental norms that are inappropriate for highly gifted children. Although they may be willing to make an effort to accommodate these youngsters, they may lack sufficient information or experience and not know what type of effort to make.

When a child enters school already able to do what the teacher intends to teach, there is seldom a variety of mechanisms for teaching that child something else. Even if there were a way to provide time, attention, and an appropriate curriculum, it would be necessary for the teacher to use different teaching methods. Highly gifted children learn not only faster than others, but also differently. Standard teaching methods take complex subjects and break them into small, simple bits presented one at a time. Highly gifted minds can consume large amounts of information in a single gulp, and they thrive on complexity. Giving these children simple bits of information is like feeding an elephant one blade of grass at a time--he will starve before he even realizes that anyone is trying to feed him.

When forced to work with the methods and pace of a typical school, highly gifted children may look not more capable than their peers, but less capable. Many of their normal characteristics add to this problem. Their handwriting might be very messy because their hands do not keep pace with their quick minds. Many spell poorly because they read for comprehension and do not see the words as collections of separate letters. When they try to "sound out" a word, their logical spelling of an illogical language results in errors. Most have difficulty with rote memorization, a standard learning method in the early grades.

### **LACK OF FIT**

The difficulty with highly gifted children in school may be summarized in three words: They don't fit. Almost all American schools organize groups of children by age. As we have seen, the highly gifted child is many ages. The child's intellectual needs might be years ahead of same-age peers, although the gulf may be larger in some subject areas than in others.

Imagine 6-year-old Rachel. She reads on a 12th-grade level, although her comprehension is "only" that of a 7th grader. She does multiplication and division, understands fractions and decimals, but counts on her fingers because she has never memorized addition and subtraction facts or multiplication tables. Her favorite interests at home are paleontology and astronomy; at school her favorite interests are lunch and recess. She collects stamps and plays chess. Although she can concentrate at her telescope for hours at a time, she cannot sit still when she is bored. She cries easily, loses her temper often, bosses other children when they "don't do it right," and cannot keep track of her personal belongings. She has a sophisticated sense of humor that disarms adults but is not understood by other children.

Putting Rachel into a regular first grade without paying special attention to her differences is a recipe for social, emotional, and educational disaster. Even if a gifted program is available (they commonly begin in third or fourth grade), it is unlikely to meet her extreme needs. Educating a highly gifted child in school is like clothing a 6X child in a store where the largest available garment is a size 3 (or with a gifted program, a 3X). Parents have to resort to alterations or individual tailoring of whatever kind they can manage.

In dealing with school issues, it is important to remember that you know more about your child than anyone else. Your knowledge, information, and instincts are useful and important, and they should be recognized in designing a school program. Your child needs individual attention. Anything else may be directly and seriously harmful. There is no ideal school pattern for the highly gifted child. However, when normal school patterns lead to difficulty, it is important to obtain real differentiation.

### **ACCELERATION**

Because highly gifted children may begin school already knowing much of the material covered in early grades and because they learn quickly, some type of acceleration is necessary. For some children and in some situations, grade skipping is the best choice. Placing a child with older children who share interests may be socially and intellectually beneficial and result in a more appropriate curriculum. It is also a simple and economical solution for the school. Some children begin school early; others skip several early grades; others skip whole educational levels, such as junior high or even high school. Skipping a single year is seldom helpful, because the difference between one grade level and the next is too small. Grade skipping is not without problems, but allowing highly gifted children to stay in a class that meets few if any of their needs may do serious and long-term damage.

Another type of acceleration is subject matter acceleration. A child may take mathematics with a class four grades ahead, reading with a class two grades ahead, and physical education with age peers. This type of acceleration takes into consideration the varying developmental ages of the highly gifted child. For further flexibility, you might consider evening classes or weekend classes at a high school or college and ask the school to excuse coverage of those subjects in regular classes. A child might go to school with age mates only in the morning or only in the afternoon. This method calls for school and parent flexibility and may lead to logistical problems with scheduling and transportation, but it is often more satisfactory than grade skipping, because the child associates at least part of the time with age peers.

### **WHEN THE SCHOOL WILL NOT CHANGE**

When parents approach teachers and administrators with information and documentation, in a spirit of cooperation rather than confrontation, offering suggestions and help rather than attacking, some positive changes in normal methods usually result. Sometimes, however, schools refuse to make changes for one child. When this happens, parents have few choices. One is to move to a school system that will make changes. Another is home schooling.

For many highly gifted children home schooling is a nearly ideal solution to the problem of fit. Instead of laboriously altering ready-made programs, parents can tailor an education precisely to the child's needs. Clubs, sports, scouting, and other activities supply social interaction with other children while parents serve as teachers or facilitators or engage tutors or mentors in various subject areas.

Home schooling is seldom an easy choice. In some districts it is either illegal or beset with regulations that make it almost as rigid as classroom schooling. When both parents or the single resident parent must work, it may be impossible. Some parents and children find the level of togetherness stifling, while others cannot avoid pushing and demanding too much. However, home schooling may be a positive choice for many families. Many children move

surprisingly smoothly from home schooling in the early years into high school or college when their intellectual needs outgrow the home environment. One of the major benefits of education at home is the maintenance of self-esteem, which is highly problematic in a school environment.

### **SOCIAL/EMOTIONAL NEEDS**

In the movie E.T. there was something heartrending in the small alien's attempts to "phone home," in his constant longing for others of his kind despite the loving concern of the family who cared for him. Highly gifted children endure some of that same pain. It is hard for them to find kindred spirits, hard for them to feel they fit into the only world they know.

Highly gifted children may have trouble establishing fulfilling friendships with people of their own age when there are few or no other highly gifted children with whom to interact. As a high school student told his mother, "I can be that part of myself that is like my classmates, and we get along fine. But there's no one I can share the rest of me with, no one who understands what means the most to me." For most highly gifted children, social relationships with age peers necessitate a constant monitoring of thoughts, words, and behavior.

One of the greatest benefits of the talent searches proliferating in colleges across the country is the chance for highly gifted children to spend time with others like themselves. For 3 weeks in the summer, children who qualify (by scoring high enough on the SAT or ACT in the seventh grade or earlier) attend class on a college campus with other highly gifted children. Rather than feeling like oddballs, they suddenly feel normal. Lifelong friendships may form in a matter of days. Many summer program participants consider the social interaction as valuable as the classes.

What else can you do to help highly gifted children find friends? It helps children to understand that there are different types of friends. They may play baseball, ride bikes, and watch TV with one person; talk about books or movies with another; and play chess or discuss astronomy with another. Some of these friends may be their own age, some may be younger or, more often, older. Only in school is it suggested that people must be within a few months of each other in age to form meaningful relationships.

### **CONCLUSION**

Raising a highly gifted child may be ecstasy, agony, and everything between. Adults must perform almost impossible feats of balance--supporting a child's gifts without pushing, valuing without over-investing, championing without taking over. It is costly, physically and emotionally draining, and intellectually demanding. In the first flush of pride, few parents realize that their task is in many ways similar to the task faced by parents of a child with severe handicaps. Our world does not accommodate differences easily, and it matters little whether the difference is perceived to be a deficit or an overabundance.

We have covered only a few issues in this space, but the most important help you can give highly gifted children can be expressed in a single sentence: Give them a safe home, a refuge where they feel love and genuine acceptance, even of their differences. As adults with a safe home in their background, they can put together lives of productivity and fulfillment.

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## Identifying Students for Services

### **The On-going Dilemma of Effective Identification Practices in Gifted Education**

By Joyce VanTassel-Baska

The identification of gifted children has long been a topic of great debate in the field of gifted education. More citations in the literature exist on this topic than on any other in the field. Moreover, it remains one of the most common problems of program development cited by school district personnel and state department coordinators in administering programs and services to gifted children.

#### **Common Problems in Identification**

There are many reasons for the intractable problems associated with identification of the gifted. One of them is related to the concept of absolute versus relative notions of giftedness. Newer definitional structures are attuned to the idea of relativity as we consider the school, the nature of the student's background, and the program in order to make decisions about individual learners.

A second issue that continues to be problematic is recognition of the range of individual differences within the group of learners who might be designated "gifted." We tend to spend a great deal of time deciding who is the last student in the program versus the first student not recommended. Cutting on a continuum of human ability is a risky venture and one many to justify.

At the same time that such debates on identification rage, highly gifted students frequently idle without extensive and intensive enough services because programs are far more likely to focus resources on the mildly gifted group which may be larger and demand more attention.

Finally there is the nagging concern that underrepresented groups are not adequately being assessed to be included in gifted programs. Thus we make the test the proverbial messenger to be attacked and continue to search for a better instrument that may reveal greater parity in performance.

Any one of these issues would be sufficient to keep identification at the top of concerns for local school districts in planning and implementing programs. The three taken together guarantee that identification will always be a controversial topic.

Until our beliefs about identification change, little progress can be made in developing a better system that resolves all of the issues noted. Our task is not to identify only the truly gifted but also to locate students who demonstrate undeveloped potential intellectually and in specific areas including academic, artistic, and leadership domains. Our task is not to select students for all time but to select them for enhanced instructional opportunities that may benefit them at a given stage of development.

Whether the intervention works or not, students should be regularly reassessed for new opportunities and dropped from those that are not meeting their needs. Our task is not to be gatekeepers to exclude students but rather custodians of promoting student growth by recognizing discernible strengths and working with the school community to enhance them

whether through the gifted program or another medium. Establishing numerical cutoffs on relevant criteria may be less useful than gaining a holistic assessment of students being considered and matching program to strengths of a particular population.

### **The Elusiveness of Giftedness**

What do we currently understand about the act of identification that may help us deal with the difficulties inherent in the process? First of all, many studies and authors favoring newer conceptual definitions of giftedness acknowledge the multidimensionality of the phenomenon (Gardner, 1991; Sternberg, 1985). Some students are omnibus gifted, capable across many domains and areas. Yet the majority of gifted students are not. They have distinct profiles of strengths and relative weaknesses. Their abilities may be discerned by performance and not paper and pencil tests. Their giftedness may not be evoked by the school environment but shine in the context of community. Some may experience developmental spurts at key stages of development which could not be discerned earlier. Interest may be piqued at some stage that motivates a student to develop abilities in relevant areas. In all of these examples, there is a clear sense that giftedness may be elusive in its manner and context of manifestation.

We also know that there are both genetic and environmental factors at work in the manifestation of giftedness. Individuals vary considerably in their ability to function effectively in various domains. Attention must be paid to the "rubber band" effect of human potential—our genetic markers allow for expansive growth and development but not to an unlimited extent. We can stretch ourselves within a range based on the genetic potential which we possess. It is the role of education in the larger environment to provide the experiences which may stretch the individual potential in the areas of greatest flexibility for learning.

This recognition of pre-existing individual differences would help educators realize the folly of trying to find a "one size fits all" program of study or curriculum. As long as differentiated practices are reserved for labeled special populations, the spirit of individualized learning will always be in jeopardy. Giftedness does not guarantee entitlement to educational privilege, but it does call for a flexible response by schools and other agencies to higher levels of functioning, based on the individual level of functioning not age.

### **Degree or Extent of Giftedness**

The concept of degree or extent of giftedness is an important aspect to consider in developing identification processes. When I directed the talent search program at Northwestern University, I had teachers tell me that seventh grade students who were scoring at the 600 level in mathematics on the Scholastic Aptitude Test (SAT) weren't truly precocious in mathematics, even though their scores placed them in the top 2% of the population. Only the 700's met that criterion.

What these teachers were noting is the wide band of difference that exists within a gifted population such that students at the bottom of a particular group may function very differently from those at the top of the group. In psychometric language, this means that gifted students may vary among themselves by as much as three standard deviations in respect to mental functioning in one or more areas. Reading level, for example, in a fifth grade gifted program could range from seventh to college level.

The implications of this phenomenon for identification is to decide how broad a group might benefit from a particular intervention and then ensure differentiation of instruction in the delivery of that intervention to ensure adequate challenge for those at the top of the group and yet not cause anxiety to set in for those at the bottom. Wide ranges of abilities within a gifted population have to be tolerated in most gifted programs since the context of delivery frequently requires sufficient numbers of students to justify the special intervention.

### **Ability Alone Not Always Sufficient**

We also know that the recognition of advanced behavior is the most critical variable in determining who can best profit from advanced work and instruction. To deny services to students clearly advanced in reading, mathematics, the arts, or other domains because they have not been formally assessed calls into question a school system's capacity to respond to individual differences. This principle of responding to advanced student behaviors is central to including teacher, parent, and community input into the identification process. Use of domain-specific checklists is one way to assess such behavior in context. Such checklists also contribute important insights into effective programming for individual children.

Work in talent development (e.g. Csikszentmihalyi, 1996; Simonton, 1999) has convinced most people in our field that ability alone may be insufficient to predict success in gifted programs, let alone life endeavors. Non-intellectual factors like motivation, personality, persistence, and concentration impact greatly on creative productivity at particular stages of development but also over the lifespan. Thus our identification processes may need to be sensitive to students whose ability threshold may be slightly lower but whose capacity and zeal to do work in a given domain may be very high. Tapping into these nonintellectual strengths can best be accomplished through performance and portfolio-based assessment protocols coupled with careful observation of performance over time.

### **Best Practices**

What are best practices for identification based on research? Currently there is a call for a new paradigm for identification, in line with the new constructs of giftedness that have been conceptualized (Passow & Frasier, 1996).

This new paradigm of identification would recognize the different ways in which students display giftedness and would call for more varied and authentic assessment. Instead of relying on intelligence and achievement test scores solely for identification, multiple criteria would be used, including more non-traditional measures such as observing students interacting with a variety of learning opportunities (Passow & Frasier, 1996) it is a belief of many in the field of gifted education that new conceptions of giftedness and a new paradigm for identifying and selecting students will help minority and disadvantaged students become more represented in gifted programs (VanTassel-Baska, Patton, & Prillaman, 1991; Ford, 1996).

### **Dynamic Assessment**

Part of the process of non-traditional assessment involves trying to tap into fluid rather than crystallized abilities. Dynamic assessment is one such non-traditional approach used to assess cognitive abilities that are often not apparent when most forms of standardized tests are used. This type of assessment usually consists of a test-intervention-retest format, with the focus

being on the improvement students make after an intervention, based on learning cognitive strategies related to mastery of the testing task (Kirschenbaum, 1998).

### **Spatial Measurements**

Research evidence also suggests that disadvantaged learners perform better on tasks that emphasize fluid over crystalized intelligence (Mills & Tissot, 1995), and spatial reasoning over verbal and mathematical (Naglieri, 1999). By employing an assessment approach that contains a strong spatial component, disparities between scores by socio-economic status (SES) levels or ethnic group may be reduced (B. Bracken, presentation at College of William and Mary, April, 1999). Thus using instruments like the Matrix Analysis Test and the Ravens Matrices may yield somewhat different populations of students than the use of traditional intelligence tests that emphasize verbal tasks. The new UNIT test also offers promise in this regard as a full scale measure.

### **Two-stage Process Needed**

There is also a need to employ a two-stage process of screening and identification to ensure that appropriate measures are used in the selection of students for a program. It is not highly defensible to use group achievement and intelligence test score data as the final arbiters for selection by merely raising the cutoff, let's say to 98%. Many times school districts will have large numbers of students who would qualify at 95%. To use a norm-referenced test that is grade- level calibrated to make judgements about students at the top end is not justifiable, given the problems of ceiling effect.

A better and more defensible strategy is to use off level aptitude and achievement measures to ascertain a true dispersion of the student scores in order to select the most able. Off level instrumentation like the PLUS test, the SCAT test and the SAT all provide such information so that identification can be more precise. Use of these instruments over the past 25 years has continued to demonstrate effectiveness and efficiency in discerning able students' range of functioning in critical domains (Benbow & Stanley, 1996).

### **Measures Need to Match Programs**

The use of measures that are relevant to program emphasis is also a crucial consideration. Using verbal measures to decide who should be in a math program makes no sense. Ensuring that an identification system is geared to the nature of the program intervention is crucial, especially at the second stage of the process. Thus, if the program emphasis is writing, a writing sample would be included at the identification stage, or if the program emphasis is science, a performance-based science assessment or science project portfolio would be included to make final selections. Such authentic assessment data strengthen the case for selecting the most apt individual students for participation in carefully defined program areas (VanTassel-Baska, 1998)

### **Age Considerations**

The use of identification protocols that are appropriate at different stages in the development of students is also a best practice in the field. Early childhood identification procedures, because of age and lack of contact with the school, have to consider parental feedback more carefully, use testing data more judiciously, and consider advanced performance tasks as an important part of the process. At secondary level, based on different organizational contexts, identification procedures need to be distinctive in respect to protocols for finding students in

a broader range of talent areas and for considering domain-specific approaches based on departmental courses of study.

### **Equity Required**

Finally, the identification process must be equitable in respect to selection, validation, and placement of students. Making placement decisions based on individual profile data is also considered best practice as it allows professional judgement to be exercised rather than just allowing a numerical cutoff score on a matrix model to determine placement (Borland & Wright, 1994).

Identification will continue to present a challenge to educators of the gifted. Yet thoughtful consideration of and reflection on various problems, issues, and current best practices can make the process more feasible and credible in school contexts.

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## Recognizing Giftedness in Young Children

By Martin T. Rogers, Ph.D. and Linda Silverman, Ph.D.

The question of whether we can recognize gifted children at an early age is embedded in a larger issue: how much of a child's giftedness is attributable to nature and how much to nurture. When the nature/nurture question was first raised, its author, Sir Francis Galton (1869), declared that nature was responsible for all of one's abilities. In American science and education, a backlash occurred for most of the 20th century in which nurture became the primary determinant of intelligence. Today, the pendulum has swung back to more of a middle ground, and now we recognize that nature and nurture are co-parents of intelligence. Children show the signs of giftedness or advanced development early in life, but whether those gifts flower into high achievements in adult life is dependent upon the nurturance they receive from their environment. Despite Madison Avenue, you just can't create a gifted child from scratch like a Yuppie pasta.

This article is based upon a comparative study of the developmental characteristics of gifted and average children (Rogers, 1986). The information was gleaned from 77 parent questionnaires; many of the parents had detailed records of their children's development (such as baby books or doctor's records). Contrary to the belief that all parents think their children are gifted, this study indicated that parents of average children do see their children's development differently from parents of gifted children. In addition, the parents of the gifted tended to **underestimate** their children's abilities rather than overestimate them. The two groups had similar socioeconomic backgrounds, and there were very few differences in physical development found between them. However, there were major differences in intellectual, imaginational and social development, as well as in talents and certain personality traits.

As you read the following descriptions, remember that each gifted child is different. Certain characteristics will apply to your child and some will not. If you see that several of these characteristics fit your child, you may wish to seek further assessment of your child's capabilities so that you can nurture those abilities.

### Early Signs of Giftedness

Parents were asked to describe their children's development during the first 36 months. One of the earliest signs of giftedness noted was **alertness**. One parent said that when her child was seven months old "he was watching Sesame Street so intently that when he finally fell asleep he was still watching and just fell over backwards." Another parent wrote, "He literally consumed his work with eagerness, wanting to learn, see, feel and touch everything, all at once."

Another early sign was **long attention span**. One parent commented, "He would play games longer than playmates and get upset when they stopped playing and would leave." A second reported, "She would work on a puzzle or a book for over a half-hour when she was only two."

Over 90 percent of the parents of the gifted saw their children as having an **excellent memory**. One gifted girl knew most of "Little Orphan Annie" at age two, and another memorized the order of the books of the Bible by age four. Well over half of the parents in the gifted group perceived their children as **rapid learners**. The speed at which gifted children learned generally became apparent by the time these children were three years old.

One girl could count to 20 at 18 months of age, and could say her ABC's at age two. Another mother wrote, "Before she went to kindergarten, she taught herself to paint and was writing in sentences. When she started kindergarten, she became disillusioned."

Nine out of ten parents of the gifted reported **advanced vocabulary development** in their children. Parents noticed extensive vocabulary in their gifted children by the time the children were three. One parent kept a record of 100 words that her boy spoke by the age of 18 months. While none of the parents of average students gave examples of any specific words, parents in the gifted group mentioned such examples as: "delicious" and "incredible" at age 2; "Rudolf was ostracized by the other reindeer" at age 2.5; "incidentally" at age 3. One 3 year old prefaced sentences with, "Well, apparently.."

Two-thirds of the parents of gifted children found their children to be **very observant**. Many parents mentioned that their children "really noticed details." One child knew how to get to the park and the library by the age of three. Sixty percent of the parents of the gifted said that their children were curious. Most of the parents of the gifted observed their children's **curiosity** by the age of 2 1/2, about two years earlier than parents of average children.

Almost all of the gifted children were perceived by their parents as **asking "probing" rather than simple questions**. At the age of 18 months, one child wondered, "What is air? How high up does it go? Why doesn't it all float away?" A three-year-old boy wanted to know how airplanes work and how people breathe. Another three year old asked, "Will I still be me when I grow up?" Global and abstract issues occupied the minds of several of these youngsters. One child asked detailed, probing questions about politics, nuclear war, world peace, starvation, pollution, energy and so forth.

### **Imagination and Creativity**

**Imaginary playmates** showed up in both groups, but only one child in the average group had more than one of these playmates while gifted children often had several of them. One child's imaginary friends included, "Jesus as a young boy. He appeared most often when 'B' was afraid, lonely or frustrated. They carried on lengthy conversations." Another child had a "family that lived in the pan cupboard: David, the father; Kookoo, the mother; and Baby Dew. They later had another baby, Rose. David died. She also had a teenager sister, Hal-lelujah." One parent wrote, "Being an only child, 'C' had 'Imaginary Friend' (that was his name) to play board games, etc. Not surprisingly, friend always lost."

Over two-thirds of the parents of the gifted described their children as **creative and imaginative**, and about half had observed signs of vivid imagination in their children before the age of three. One parent recollected:

"At about age three, 'D' wanted a certain toy and his Dad told him to get a job and earn the money. He immediately went to his room, colored about 10 pictures and took them around the block, selling them door-to-door. Most people gave him 10 to 15 cents for them because of the story he told them. We only knew our immediate neighbors, so we wondered what our other neighbors thought of us!"

### **Academic Skills**

Many gifted children show an **intense interest in books at an early age**. One parent reported, "at 13 months, she would drag one of us to read with her and sit fascinated until the

whole book was read." By the time these children were in third or fourth grade, three-fourths of them continued to be interested in reading, compared to one-fourth of the average group.

Almost half of the parents of the gifted students describe their children's interest in reading as "intense." A mother of a third grader wrote, "She always loved reading. She likes Poe, Shakespearean quotes, poetry, Shel Silverstein, Charlotte's Web, etc." A fourth-grade boy sought out "Encyclopedia Brown mysteries, anything on Einstein or a composer, especially Beethoven." Several of the parents of the gifted mentioned that their children enjoy informational books compared with only one such reference in the average group. Significant differences were found in the ages at which gifted children recognized letters, recognized words, sight read, and sounded out new words as compared with average children.

Almost all of the gifted group liked puzzles. Four out of five gifted children would **put together a 20-piece puzzle by the age of three**. One child could put together a 100-piece puzzle between the ages of four and five, and a very precocious youngster could solve a 500-piece puzzle at the age of three "but became quite frustrated," according to the parents. One parent gave us a fascinating account: "He could tell by the shapes how to put the puzzle together and memorized the shapes of the puzzle pieces very fast; then he would turn the pieces and work the puzzle upside-down."

About one-fourth of the gifted group showed **an interest in time** by the age of two. One parent wrote, "He had a play watch when he was two and we would work on how to read it and what it all meant; he would always want to know how long things would take to do." Another parent reported that his child became "obsessed" about knowing what time it was, what day of the week it was and the date. Almost two-thirds of the gifted group told time in hours by the age of five. Parents of average children limited their descriptions to the age at which their children told time while parents of gifted children often described the way their child related to time as a concept. Though competent at telling time, gifted children often seemed to lose track of it when involved in other activities.

By age three, more than half of the gifted group could count to ten. Consistent differences were also found between the groups in **interest in math** games, calculators and computers. Five times as many gifted children as average children were reported as having a high degree of understanding of mathematical concepts. One child was able to do double digit addition in his head in first grade and was pressing his parents to teach him division in kindergarten.

### **Personality Traits**

The majority of the parents of the gifted group described their children as having a great **sense of humor**. Of the nine parents who mentioned puns, only one was in the average group. One parent indicated that at five her daughter became a punster, joking about "symbols" and "cymbals." Another parent said that her son appreciated adult jokes and understood them from the time he was around four years old. He liked adults better than children from the time he was two or three.

Over half of the gifted sample showed **intense reactions of frustration** and seemed **perfectionistic** to their parents. None of the gifted group were seen as reacting "mildly" to criticism. Anger was the most common reaction to criticism reported. One of the areas of perfectionism often mentioned by parents had to do with academic concerns. Both groups said that their children tended to be more perfectionistic in areas of interest (which did not include cleaning their rooms). Gifted or not, they still don't want to clean their rooms.



None of the average students chose friends much older than themselves; whereas, one-third of the gifted students **chose older playmates** and 15 percent chose much older companions. Parents of the gifted group often remarked that their children tended to spend time with adults, where this was not mentioned by parents of the average group. More than one-third of the gifted children were comfortable playing by themselves. Parents of gifted children often mentioned that their children enjoyed spending time alone reading.

Many gifted children showed **great concern for morality and justice**. Some of their parents discussed global issues with them; whereas, this wasn't mentioned by parents of average children. Although concern for fairness was mentioned by parents in both groups, it was a predominant factor reported by the parents of the gifted sample.

Other differences found between gifted and average students in this study showed gifted students to have **more talents, greater maturity, higher intensity of competitiveness in several areas, greater leadership ability, greater number and intensity of interests, and greater willingness to invest time and effort in their interests than their same-age peers**.

### **A Final Word**

If your child fits a large number of these characteristics, it is a good idea to **keep records** of early achievements to assist later identification. Four years old is not too young to have your child tested by a qualified examiner. Make sure this individual is experienced with gifted children. Because their minds are developmentally advanced, gifted children need to be given early exposure to games and activities designed for older children. It is important to find environments that address your child's unique potential. As one parent in our study stated, "When educational needs are met, other problems improve." These children need time with others like themselves so that they can find true peers with whom they can relate. Once you discover that your child is gifted, cautions must be taken so that you neither hide nor flaunt his or her giftedness. One can lead to atrophy of abilities and the other can lead to social and emotional problems. Early recognition and nurturance of giftedness will increase your child's chances of achieving happiness and fulfillment in adult life.

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## **Parent Assessment of Giftedness: Using Portfolios to Document Talent**

By Dr. Bertie Kingore

One ignored role of portfolios is parental assessment of children's exceptional learning needs. The products children develop provide clear documentation of achievements and potential.

### **Introduction for Educators**

Parents have the right and need to be active partners with schools in planning and supporting the education of their children. When identifying gifted potential, districts benefit from parental assessment information in forms other than checklists. Portfolios enable parents to be proactive instead of reactive. They encourage parents to be viable members in the assessment process by preparing concrete examples of children's abilities and needs.

Portfolios increase the credibility of parental assessment of gifted potential by documenting the depth and complexity of the child's work. Documentation through products illustrates each gifted characteristic of the child that a parent has observed and increases the likelihood that a parent's perception of the child's needs is respected. However, if parents overestimate the advanced potential of a child, school personnel can meet with the parent to share a small set of typical examples of grade-level products to compare with the parent's selections and concretely substantiate that the child's learning needs are best met through the core curriculum rather than advanced contents.

Parental development of a portfolio to substantiate a student's gifted potential is particularly needed when the child is:

- Part of an educational system that values parental assessment in identifying and serving advanced learners and wants to increase the validity of that assessment.
- Very young and not yet recognized as advanced by adults at school.
- A member of a diverse culture whose gifted behaviors are more difficult to assess in a mainstream classroom.
- Advanced in one subject area but still not all.
- New to the area so the child's potential has not been demonstrated in that school.
- A student in a school where the curriculum in all classes is not differentiated for able learners.

### **Guiding Parents' Selection of Products**

Parents need guidance in selecting products that are appropriate and effective. Share your district's mission statement and definition of giftedness with parents so they can more directly match selections in the portfolio to the school's philosophical stance. For example, when your school's program serves academic giftedness in language arts, math, social studies, and science, you want parents to include products that demonstrate advanced talents in one or more of those areas.

The product list included in the parent section is meant to prompt ideas of a wide range of products from home that might be appropriate for students' portfolios (adapted from Kingore, 1999a). A variation of these products specifically suited to very young children is shared in Communicator (Kingore, 1999b).

The following factors increase the assessment value of a portfolio:

- A portfolio should be an integral reflection of what a child has learned rather than artificial activities and isolated skills.
- Products that effectively advocate giftedness demonstrate depth, complexity, and the ability to process and reorganize information to produce a product unique for that age or level.
- The products should help substantiate that the child's interest and expertise in topics are not typical.
- Products selected for a portfolio must be completed by the child without assistance.
- the likelihood that your perception of your child's needs is accepted and respected inasmuch as the products illustrate each gifted characteristic you have observed.

The parent section of this article (below) helps parents understand how to facilitate their assessment and development of a portfolio. Specify to whom parents should share the portfolio once the product selection process is complete.

### **Parental Assessment: Develop a Portfolio to Document Your Child's Talents**

Prepare a small selection of your child's products to document learning achievements and advanced potential. Schools want to provide opportunities for children to learn as much as they are ready and able to learn. Your insight about your child's at home demonstrations of learning heighten our understanding of your child's needs. A portfolio increases the credibility of your advocacy for your child by documenting the depth and complexity of your child's work. Product examples increase the likelihood that your perception of your child's needs is accepted and respected inasmuch as the products illustrate each gifted characteristic you have observed.

### **How Do Parents Begin?**

- Use a pocket folder or photo album (one-inch thickness) as a portfolio container to organize a few products your child has produced. Photographs can be used to represent large or three-dimensional items.
- Keep the portfolio small. Six to ten items are probably sufficient to represent your child's talents. A small sampling of carefully selected products makes a more thoughtful presentation than a large scrapbook approach. Educators have demanding work loads and are more likely to have time to attend with interest to a sampling.
- Date each product. It is significant for authenticity and achievement level comparisons to note when each item was completed.
- If needed for clarity, prepare brief product annotations that explain how your child demonstrated a specific characteristic through that product or during the process of completing that product.
- Briefly describe additional exceptional behaviors frequently displayed by your child, such as independent thinking, problem solving, and questions about topics or concepts not typically asked by children. You are in a unique position to recount to others the process as well as the products of your child's learning.
- Share written anecdotes of the child's expressed perceptions of school that suggest advanced sensitivity and unexpected points of view. Use your child's own words to describe the challenge or lack of it in learning situations. For example, children often

tell adults that they are bored. What does your child really mean if she or he says "bored"? Record what your child says about when and how they are bored at school.

### **Guidelines for Selecting Portfolio Products**

The included portfolio products list is meant to prompt ideas of a wide range of products that might be appropriate in your child's portfolio. Select products that are an integral reflection of what your child has learned rather than artificial activities and isolated skills. Let the portfolio represent the main idea you want educators to understand about your child.

Products that document giftedness demonstrate depth, complexity, and the ability to process and reorganize information to produce a product unique for that age or level. The products may substantiate your child's interest and expertise in topics that are not typical.

Products selected for a portfolio must be completed by the child without assistance for two important reasons. Foremost, because your child's self esteem is influenced by his or her competent personal achievements. Remaking products into adult projects risk children acquiring feelings of doubt and ambiguity about their abilities. Secondly, the portfolio is taken more seriously when the products look child-appropriate rather than adult-level perfect. Educators are suspicious of products that suggest extensive adult intervention.

### **A Final Encouragement**

As an advocate rather than an adversary, assume the clear stance that you want what all parents want for their children: the opportunity for children to learn as much as they are ready and able to learn. All children deserve to learn at their optimum readiness level—even the gifted. Be an advocate whose only motive is to insure your child's right to an appropriate education. If we are motivated by children's best interests and not our ego needs, our efforts will usually guide us in the most appropriate direction.

### **Examples of Portfolio Products Product, Explanation, and Purpose**

**Art** - Art pieces should include the child's natural, creative explorations and interpretations (rather than crafts). Art reflects development levels, interests, graphic talents, abstract thinking, and creativity.

**Audio tapes** - Tape the child's explanation of advanced concepts, philosophical viewpoints, musical creations, problem solutions, and ideas. Audio tapes verify vocabulary, fluency, creativity, high-order thinking, and concept depth.

**Computer** - Document computer skills through applications of more sophisticated software and programs created by the child. Computer-generated products indicate computer literacy, analysis, content-related academic skills, and applied concepts.

**Dictations** - Write your child's dictated explanation of a product or process. Prompt these dictations with statements such as: "Tell me how you did that." Dictations increase adults' understanding of the why and how of what children do. It may indicate advanced vocabulary, high-level thinking, fluency, and content depth.

**Graphs or charts** - Some children produce graphs or charts to represent relationships, formulate problems, illustrate math solutions, and demonstrate the results of independent investigations. Graphs or charts demonstrate specific skills or concepts applied in the task, high-level thinking, data recording strategies, and organizational skills.

**Photographs** - Photograph your child's math patterns, creative projects, dioramas, sculptures, constructions, experiments, models, or organizational systems. Photographs represent three-dimensional products. They provide a record when no paper product is feasible.

**Reading level** - Provide one or two examples of books or printed material your child reads independently (not material your child has memorized). Include your child's reflection of the book to demonstrate analysis skills. All children do not read and interpret advanced-level materials. However, since advanced learning opportunities often require reading independence, educators are interested in students' reading levels.

**Research** - Gifted students usually have information and expertise beyond the age-level expectations in one or more areas. Share examples of the independent studies pursued by your child. Research products reveal specific interests, synthesis, content depth, and complexity of learners.

**Video tape** - Video tapes are wonderful ways to document performing arts and your child's learning process. they are less applicable to substantiate academic skill development due to the equipment and time necessary to show the tape. Limit tape entries to three or four minutes if they are to be reviewed by educators. A video presents a significant visual record and integration of skills and behaviors. When recording group interactions, a video can demonstrate interpersonal and leadership skills.

**Written products** - Provide examples of original works written by your child including stories, reports, scientific observations, poems, or reflections. Written products may demonstrate advanced language, thinking, organization, meaning construction, concept depth, and complexity.

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### Characteristics of Gifted Children and Talented Children and Possible Associated Problems

Characteristics of Gifted Children and Talented Children	Possible Associated Problems
Gifted and talented children may:	Gifted and talented children may:
learn quickly and easily have the ability to abstract and reason critically see relationships between ideas and events	become bored and frustrated dislike repetition and shallow curriculum hide abilities to gain acceptance receive negative adult attitudes to smartness
exhibit verbal proficiency	dominate discussion have difficulty with listening skills exhibit manipulative behaviour
have a high energy level	need less sleep become frustrated with inactivity, lack of challenge or active inquiry
exhibit heightened curiosity	take on too many activities
be extremely persistent concentrate on tasks of high interest for extended periods	disrupt class routine feel stifled by restrictions resist interruption or schedules be perceived as stubborn, uncooperative
exhibit different learning styles - accelerated: desiring mastery, achievement and/or - enriched: desiring depth of knowledge, the need to experience, emotional investment in subject, imagination	become frustrated with absence of progress be prone to being 'overdriven' and/or not be motivated by results be resistant to interruption be seen as time wasting or preoccupied
exhibit unusual emotional depth and intensity	be unusually vulnerable feel confused if thoughts and feelings not taken seriously
be highly sensitive be acutely perceptive	be perceived as immature try to mask feelings to conform be vulnerable to criticism
be concerned with adult/moral issues be idealistic	attempt unrealistic reforms feel frustrated, angry. Depressed develop a cynical attitude receive intolerance from age peers
aim at perfection	set unrealistically high goals feel inadequate feel frustrated with others fear failure, inhibiting attempts in new areas
exhibit independence, nonconformity	have a tendency to challenge and question indiscreetly have difficulty with rigid conformity, may be penalised exhibit rebellious behaviour
have heightened self awareness, feelings of being different	experience social isolation regard difference as bad. worthless, resulting in low self esteem
have a keen sense of humour	use humour inappropriately or to attack others feel confused when humour not understood feel rejected by others
possess unusual imagination	be seen as weird feel stifled by lack of creative opportunities
respond and relate to older children and adults	experience social isolation be seen as show off, odd, superior, critical be rejected by older children

## **NRC/GT Resources for Identification**

This information is from the Spring 2000 issue of *The Communicator*, the magazine of the California Association for the Gifted.

The National Research Center on the Gifted and Talented is funded by the Office of Educational Research and Improvement, United States Department of Education, under the Jacob K. Javits Gifted and Talented Students Education Act. It is a collaborative effort of the University of Connecticut, City University of New York/ City College, Stanford University, University of Virginia and Yale University, with Joseph Renzulli as the director.

In the years since its establishment, the NRC/GT has provided a wealth of information for practitioners through its many published research projects. You may find abstracts for all publications listed along with practical guidelines at [www.gifted.euconn.edu/resource](http://www.gifted.euconn.edu/resource). NRC/GT, University of Connecticut, 362 Fairfield Road, U-7, Storrs, CT 06269-2007. 860-486-4676.

### **Instruments Used in the Identification of Gifted and Talented Students. #95130**

Callahan, C. M., Hunsaker, S. L., Adams, C. M., et al. 1995

This multifaceted study examined literature, locally developed and standardized identification instruments, procedures, and different identification strategies. Reviews of exemplary practice led to the development of standards for identification, assessment, and screening.

\$15.00

### **Project START: Using a Multiple Intelligences Model in Identifying and Promoting Talent in High Risk Students. #95136**

Callahan, C. M., Tomlinson, C. A., Moon, T. R., et al. 1995

This three-year research project focusing on low income, minority students found that broader conceptions of giftedness, new identification processes, increased teacher awareness of talent, and family outreach positively affect success in school.

\$15.00

### **Issues and Practices Related to Identification of Gifted and Talented Students in the Visual Arts. #RBDM 9202**

Clark, G. A., & Zimmerman, E., 1992

What is talent in the visual arts? This and many other current issues and practices relative to identifying gifted and talented young people in the visual arts are examined. Practical suggestions are provided in a step-by-step identification procedure.

\$8.00

### **A Review of Assessment Issues in Gifted Education and Their Implications for Identifying Gifted Minority Students. #RM95204** Frasier, M. M., Garcia, J. H., & Passow, A. H., 1995

Research and literature review centers on the assessment and identification of potentially gifted students. Major reasons for the underrepresentation of special populations in gifted programs are analyzed.  
\$8.00

**An Exploratory Study of the Effectiveness of the Staff Development Model and the Research Based Assessment Plan in Improving the Identification of Gifted Economically Disadvantaged Student. #RM95224**

Frasier, M. M., Hunsaker, S. L., Lee, J., et al., 1995

Observation of traits, attributes, and behaviors serve well in the process of identifying potentially gifted and talented students from economically disadvantaged families or students with limited English proficiency.

\$6.00

**Toward a New Paradigm for Identifying Talent Potential. #94112** Frasier, M. M., & Passow, A. H., 1994

Five elements featuring a new paradigm of giftedness are presented and discussed. The monograph sections provide practitioners with insight as to how giftedness may be identified among all groups of young people.

\$10.00

**Artistic Talent Development for Urban Youth: The Promise and the Challenge. #RM99144**

Oreck, B., Baum, S., & McCartney, H.

Little information exists about identification and nurturance of artistic talent from diverse populations, especially those from economically disadvantaged circumstances. This study followed 23 children and young adults aged 10-26 as they progressed through three different stages of learning in music and dance.

Coming Soon

**Core Attributes of Giftedness: A Foundation for Recognizing the Gifted Potential of Minority and Economically Disadvantaged Students. #RM95210**

Frasier, M. M., Hunsaker, S. L., Lee, J., et al., 1995

What recognizable attributes characterize giftedness in children from minority or socially disadvantaged backgrounds? Literature reviews and qualitative content analysis provided the basis of viable procedures that facilitate teachers' recognition of target populations.

\$5.00

**Educators' Perceptions of Barriers to the Identification of Gifted Children From Economically Disadvantaged and Limited English Proficient Backgrounds. #RM95216**

Frasier, M. M., Hunsaker, S. L., Lee, J., et al., 1995

Survey results provide insights into perceptions held by educators with respect to identification of gifted minority and economically disadvantaged students. Implications of the study are discussed with an emphasis on appropriate staff development.

\$5.00



**The Recruitment and Retention of African American Students in Gifted Education Programs: Implications and Recommendations. #RBDM 9406**

Ford, D. Y., 1994

Recent collective efforts of leaders in the field of gifted education have focused attention on gifted African American students, their identification, and their placement in gifted programs. Critical issues related to continued program involvement are addressed.

\$10.00

**Recognizing Talent: Cross-Case Study of Two High Potential Students With Cerebral Palsy. #CRS94308 Willard-Holt, C., 1994**

Consider a gifted student with cerebral palsy unable to communicate with speech. Two such students were studied to determine how they indicated their intellectual abilities. The best instructional strategies to facilitate their abilities are documented.

\$6.00

**A New Window for Looking at Gifted Children. #RM95222 Frasier, M. M., Martin, D., Garcia, J., et al., 1995**

If a potentially gifted child comes from an economically disadvantaged family and has limited proficiency in English, how will he or she be identified? This document addresses issues relating to possible underrepresentation in gifted programs and provides practical suggestions.

\$6.00

**A Study of Achievement and Underachievement Among Gifted, Potentially Gifted, and Average African American Students. # 95128**

Ford, D. Y., 1995

Are African Americans underrepresented in programs for gifted and talented students? This study researched this question, while examining student identification procedures, attitudes, and perceptions associated with discrimination and underachievement.

\$10.00

**Publication Date:** 1997-05-00

**Author:** Schwartz, Wendy

**Source:** ERIC Clearinghouse on Urban Education New York NY.  
ERIC/CUE Digest, Number 122.

## **Strategies for Identifying the Talents of Diverse Students**

By Wendy Schwartz

The number of programs for gifted students is increasing nationwide, largely the result of Federal grants from the Jacob Javits Gifted and Talented Students Act of 1988. Students of color and those who are poor and limited in their English proficiency continue to be severely under represented in these programs, however. The reason is not that they are less talented than their middle-class white classmates; rather, their different experiences, values, and beliefs have prevented them from fully demonstrating their abilities through commonly used assessment instruments, and in traditional gifted education programs.

To assess the abilities of all students more accurately, educators are now using criteria for giftedness that give equal attention to academic and non-academic abilities. Identification strategies, consisting of both traditional and non-traditional methods, often include a review of student behaviors as well as standardized test scores (Frasier, 1992; Clasen, 1993). To better develop the talents of all students, teachers are being prepared to recognize diversity in giftedness. To ensure that children receive early enrichment in school if their family cannot provide it, many educators are also beginning the gifted identification process at the preschool level. Finally, to redress the past inequities in student selection for gifted programs, school districts are beginning to reach out to diverse communities to increase the access of all students to such programs.

Thus, the goal of education for the gifted has become inclusivity, not exclusivity (Frasier, 1992), although the debate over the value of gifted programs, particularly as they are thought to perpetuate student tracking practices, continues.

### **DEFINING INTELLIGENCE AND TALENT**

Traditionally, a student's intelligence was considered in very narrow terms, defined by only those abilities measured by an IQ test. Now, educators are more likely to use the term "talent" instead of "intelligence," and to describe it as an indication of future achievement and a potential to be nurtured and developed, not a demonstrated, immutable ability. Emphasis is shifting from what a child knows to how a child learns (Hiatt, 1991; Clasen, 1993). There is a recognition that a great diversity exists among the gifted and their expression of talent, and, particularly, that different cultures express themselves differently. The result is that evidence of giftedness may be overlooked by evaluators unfamiliar with a child's native culture (Frasier, 1992).

Using Gardner's (1983) concept of multiple intelligences, many indicators of talent can be found in all children, regardless of ethnicity or poverty status. In fact, gifted people may manifest their abilities through just a single talent, such as music or mathematics. Also, evidence of giftedness, particularly in children of diverse cultures, is often non-traditional.

Indicators of superior intelligence include the following (Griffin, 1992; Clasen, 1993; Coleman & Gallagher, 1995):

- The ability to manipulate a symbol system.
- The ability to think logically.
- The ability to use stored knowledge to solve problems.
- The ability to reason by analogy.
- The ability to extrapolate knowledge to different circumstances.
- Creativity and artistic ability.
- Resiliency: the ability to cope with school while living in poverty with dysfunctional families.
- The ability to take on adult roles at home, such as managing the household and supervising siblings, even at the expense of school attendance and achievement.
- A strong sense of self, pride, and worth.
- Leadership ability and an independent mind.
- Understanding of one's cultural heritage.

### **ASSESSING GIFTEDNESS - IDENTIFICATION METHODS**

To reduce the possibility that children who do not fit stereotypical profiles of gifted children will be passed over, identifying students from diverse backgrounds for talent needs to be a multi-pronged effort by many of the adults close to them. Involving adults from children's home, religious, and community lives in the identification process helps ensure that the availability of gifted programs is widely known. Outreach is especially important in areas where parents may be totally absorbed by meeting their family's basic and immediate needs, and unable to focus on the possibility that their children may be gifted or to provide educational enrichment.

To facilitate identification at school, teacher training programs are now providing an education about cultural and talent diversity among gifted students, particularly to help educators understand how learning style differences can mask evidence of special talents (Balzer & Siewert, 1990).

Neither poor academic achievement nor limited English language ability indicates a lack of giftedness (Shaklee & Hansford, 1992), for a variety of factors can prevent children from fully demonstrating their intellect. For example, a lack of access to stimulating educational materials and experiences can impede children's early intellectual development, nutritional deficiencies can compromise their ability to concentrate, social isolation can delay their development of interpersonal skills, and trauma from a disadvantaged and dysfunctional home life can depress their overall functioning (Balzer & Siewert, 1990).

The children themselves, and the adults in their lives, may not even be aware of their talents. At an early age, possibly as a result of discrimination faced by their family or an internalization of negative attitudes of educators, even very intelligent students may develop low self-esteem and an expectation of failure that compromise their efforts to succeed (Passow, cited in Anthony, 1991).

Also, children may not have the opportunity to explore their abilities in the early grades. Many schools do not provide a psychologically safe environment designed for

experimentation and self-expression--one that would allow students to make up for time lost in a home environment that did not cultivate their talents (Shaklee, 1992). Thus, even by third grade, when it is traditional to assess students for gifted programs, some already will have adapted to an unchallenging education system, stifling their creativity and curiosity.

### **ASSESSMENT TOOLS**

Schools can use the following methods of identifying giftedness in concert to ensure that all students receive fair consideration (Duncan & Dougherty, 1991; Shaklee, 1992; Shaklee & Hansford, 1992; Passow, 1993):

**STANDARDIZED TESTS.** New standardized tests have been developed to replace traditional instruments determined to be culturally biased. They include Mercer's System of Multicultural Pluralistic Assessment (SOMPA), Renzulli and Hartman's Scale for Rating Behavioral Characteristics of Superior Students, the PADI diagnostic battery, and Bruch's Abbreviated Binet for the Disadvantaged (ABDA).

**OBSERVATION.** Recommendations from educators, parents, and classmates can draw attention to children's talents, such as sensitivity to and insight into their environment, and an ability to manipulate the symbol systems valued by a subculture. Soliciting such information can begin at the preschool level and continue throughout schooling. Parents can notice their children's level of absorption in intellectual tasks and unusually varied interests and curiosity. In fact, asking parents to consider their children's talents is a good way to encourage their involvement in enrichment activities.

Teacher observation permits the evaluation of development over time. Teachers can consider the way students problem solve, as well as their answers. They can see how students use their time, and how many of the talent indicators cited above apply to them. Also, simply asking students who is the smartest or most helpful among them can prompt teachers' identification of an otherwise unnoticed child.

**SELF-IDENTIFICATION.** Through biographical inventories, students can indicate talents they use in non-school settings, such as membership in a drama club. They can describe their participation in family activities, and even indicate if they assume a management role at home.

**PORTFOLIOS.** Progress over time, along with overall achievement, can be assessed by reviewing the materials that students select for their portfolios. This allows for evaluation in areas such as exceptional learning, use, and generation of knowledge. Also, unlike standardized tests, portfolios permit assessment of students' creativity. To help standardize portfolio evaluation, schools can develop a list of criteria to consider, such as the complexity of the presentation.

### **CONCLUSION**

Identifying the special talents of students from diverse backgrounds is just the first step toward helping them achieve their full potential. Educators need to develop programs for gifted students that reflect and respect their cultures and learning styles. Doing so will demonstrate to the students that they truly belong in such programs, and will help ensure

their retention and success. Teachers, along with community members (including local colleges) and the students' families, need to work together to empower and encourage all students, and to provide them with enriching educational materials and experiences and role models and mentors.

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## **The Iowa Acceleration Scale**

By Cheryll M. Adams, Ph.D.

Controversy has traditionally surrounded acceleration for gifted students, particularly acceleration by grade-skipping. While the reasons are many and have been discussed elsewhere in this issue, the practice has traditionally not been supported fully by most educators and administrators. Instead, grade-skipping is seen as a last resort for gifted students when all other interventions fail. The purpose of this article is not to discuss the pros and cons of whole grade acceleration, but to provide information about an excellent instrument, the Iowa Acceleration Scale, that can assist in making these decisions for the small number of exceptional students for whom it is the best option.

The Iowa Acceleration Scales (IAS) was developed by Assouline, Coleangelo, Lupkowski-Shoplik, and Lipscomb (1998), as a guide for making decisions about whether or not a student was a good candidate for whole-grade acceleration. The IAS can be used for early entrance into kindergarten or first grade as well as at other points through eighth grade. It is not suggested for use when making decisions about early entrance into college.

The IAS is not a paper and pencil assessment to which the student responds. Instead, it is a "comprehensive guide to be used as the primary instrument in the discussion of whole-grade acceleration" (Assouline, et. al., 1998). There is no "cut-off score;" the scores in the IAS result in categories that are then used as guidelines for decision-making and planning.

Advantages listed by the IAS' authors include: ". . . a more objective look at the student, an analysis of the major factors to be considered in the decision, guidelines for weighting the relative importance of these factors, documentation of the student's strengths and concerns, a numerical range to guide the discussion and decision of acceleration, and a standard of comparison with students who have had successful accelerations." (p. 2).

There are 11 sections to the IAS to gather such information as standardized scores, general information, prior achievement, development factors, attitude, and support. The manual is comprehensive and discusses each of the 11 sections thoroughly. There is a section on the "Top Ten Issues Regarding Acceleration," that offers answers to many of the myths and concerns surrounding acceleration. Case studies are also provided.

The Center for Gifted Studies and Talent Development at Ball State University has used the IAS with several students and school corporations. If you would like to have a student's readiness for whole-grade acceleration assessed, please contact Dr. Cheryll Adams at 1-800-842-4251 (IN only), 765-2855390, or cadams@bsu.edu.

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## **Dual Exceptionalities**

By Colleen Willard-Holt

Gifted students with disabling conditions remain a major group of underserved and understimulated youth (Cline, 1999). The focus on accommodations for their disabilities may preclude the recognition and development of their cognitive abilities. It is not unexpected, then, to find a significant discrepancy between the measured academic potential of these students and their actual performance in the classroom ((Whitmore & Maker, 1985). In order for these children to reach their potential, it is imperative that their intellectual strengths be recognized and nurtured, at the same time as their disability is accommodated appropriately.

### **ASSESSMENT**

Identification of giftedness in students who are disabled is problematic. The customary identification methods (standardized tests and observational checklists) are inadequate, without major modification. Standard lists of characteristics of gifted students may be inadequate for unmasking hidden potential in children who have disabilities. Children whose hearing is impaired, for example, cannot respond to oral directions, and they may also lack the vocabulary which reflects the complexity of their thoughts. Children whose speech or language is impaired cannot respond to tests requiring verbal responses. Children whose vision is impaired may be unable to respond to certain performance measures, and although their vocabulary may be quite advanced, they may not understand the full meaning of the words they use (e.g., color words). Children with learning disabilities may use high-level vocabulary in speaking but be unable to express themselves in writing, or vice versa. In addition, limited life experiences due to impaired mobility may artificially lower scores (Whitmore & Maker, 1985). Since the population of gifted/disabled students is difficult to locate, they seldom are included in standardized test norming groups, adding to the problems of comparison. In addition, gifted children with disabilities often use their intelligence to try to circumvent the disability. This may cause both exceptionalities to appear less extreme: the disability may appear less severe because the child is using the intellect to cope, while the efforts expended in that area may hinder other expressions of giftedness.

The following lists are intended to assist parents and teachers in recognizing intellectual giftedness in the presence of a disability.

### **CHARACTERISTICS OF GIFTED STUDENTS WITH SPECIFIC DISABILITIES**

#### **Gifted Students with Visual Impairment**

- fast rate of learning
- superior memory
- superior verbal communication skills and vocabulary
- advanced problem-solving skills
- creative production or thought that may progress more slowly than sighted students in some academic areas

- ease in learning Braille
  - great persistence
  - motivation to know
  - sometimes slower rate of cognitive development than sighted students
  - excellent ability to concentrate
- (Whitmore & Maker, 1985)

### **Gifted Students with Physical Disabilities**

- development of compensatory skills
  - creativity in finding alternate ways of communicating and accomplishing tasks
  - impressive store of knowledge
  - advanced academic skills
  - superior memory
  - exceptional problem-solving skills
  - rapid grasp of ideas
  - ability to set and strive for long-term goals
  - greater maturity than age mates
  - good sense of humor
  - persistence, patience
  - motivation to achieve
  - curiosity, insight
  - self criticism and perfectionism
  - cognitive development that may not be based on direct experience
  - possible difficulty with abstractions
  - possible limited achievement due to pace of work
- (Cline, 1999; Whitmore & Maker, 1985; Willard-Holt, 1994)

### **Gifted Students with Hearing Impairments**

- development of speech-reading skills without instruction
- early reading ability
- excellent memory
- ability to function in the regular school setting
- rapid grasp of ideas
- high reasoning ability
- superior performance in school
- wide range of interests
- nontraditional ways of getting information
- use of problem-solving skills in everyday situations
- possibly on grade level
- delays in concept attainment
- self starters
- good sense of humor
- enjoyment of manipulating environment
- intuition
- ingenuity in solving problems



- symbolic language abilities (different symbol system)  
(Cline, 1999; Whitmore & Maker, 1985)

### **Gifted Students with Learning Disabilities**

- high abstract reasoning ability
  - good mathematical reasoning ability
  - keen visual memory, spatial skills
  - advanced vocabulary
  - sophisticated sense of humor
  - imaginative and creative
  - insightful
  - exceptional ability in geometry, science, arts, music
  - good problem-finding and problem-solving skills
  - difficulty with memorization, computation, phonics, and/or spelling
  - distractibility and/or disorganization
  - supersensitivity
  - perfectionism
  - grasp of metaphors, analogies, satire
  - comprehension of complex systems
  - unreasonable self expectations
  - often, failure to complete assignments
  - difficulties with sequential tasks
  - wide variety of interests
- (Baum, Owen, & Dixon, 1991; Silverman, 1989)

Research indicates that in many cases, a child is diagnosed with ADHD when in fact the child is gifted and reacting to an inappropriate curriculum (Webb & Latimer, 1993). The key to distinguishing between the two is the pervasiveness of the "acting out" behaviors. If the acting out is specific to certain situations, the child's behavior is more likely related to giftedness; whereas, if the behavior is consistent across all situations, the child's behavior is more likely related to ADHD. It is also possible for a child to be BOTH gifted and ADHD. The following lists highlight the similarities between giftedness and ADHD.

### **Characteristics of Gifted Students Who Are Bored**

- Poor attention and daydreaming when bored
- Low tolerance for persistence on tasks that seem irrelevant
- Begin many projects, see few to completion
- Development of judgment lags behind intellectual growth
- Intensity may lead to power struggles with authorities
- High activity level; may need less sleep
- Difficulty restraining desire to talk; may be disruptive
- Question rules, customs, and traditions
- Lose work, forget homework, are disorganized
- May appear careless
- Highly sensitive to criticism

- Do not exhibit problem behaviors in all situations
- More consistent levels of performance at a fairly consistent pace  
(Cline, 1999; Webb & Latimer, 1993)

### **Characteristics of Students with ADHD**

- Poorly sustained attention
- Diminished persistence on tasks not having immediate consequences
- Often shift from one uncompleted activity to another
- Impulsivity, poor delay of gratification
- Impaired adherence to commands to regulate or inhibit behavior in social contexts
- More active, restless than other children
- Often talk excessively
- Often interrupt or intrude on others (e.g., butt into games)
- Difficulty adhering to rules and regulations
- Often lose things necessary for tasks or activities at home or school
- May appear inattentive to details
- Highly sensitive to criticism
- Problem behaviors exist in all settings, but in some are more severe
- Variability in task performance and time used to accomplish tasks.

(Barkley, 1990; Cline, 1999; Webb & Latimer, 1993)

### **Questions To Ask in Differentiating between Giftedness and ADHD**

- Could the behaviors be responses to inappropriate placement, insufficient challenge, or lack of intellectual peers?
- Is the child able to concentrate when interested in the activity?
- Have any curricular modifications been made in an attempt to change inappropriate behaviors?
- Has the child been interviewed? What are his/her feelings about the behaviors?
- Does the child feel out of control? Do the parents perceive the child as being out of control?
- Do the behaviors occur at certain times of the day, during certain activities, with certain teachers or in certain environments?

### **Implications for Students with Dual Exceptionalities**

Commitment to identifying and nurturing the gifts of students with disabilities implies specific changes in the way educators approach identification, instruction, and classroom dynamics.

### **Identification**

- Include students with disabilities in initial screening phase.
- Be willing to accept nonconventional indicators of intellectual talent.
- Look beyond test scores.
- When applying cutoffs, bear in mind the depression of scores that may occur due to the disability. DO NOT aggregate subtest scores into a composite score.
- Compare with others who have similar disabilities.

- Weight more heavily characteristics that enable the child to effectively compensate for the disability.
- Weight more heavily areas of performance unaffected by the disability.
- Allow the child to participate in gifted programs on a trial basis.

### **Instruction**

- Be aware of the powerful role of language; reduce communication limitations and develop alternative modes for thinking and communicating.
- Emphasize high-level abstract thinking, creativity, and a problem-solving approach.
- Have great expectations: these children often become successful as adults in fields requiring advanced education.
- Provide for individual pacing in areas of giftedness and disability.
- Provide challenging activities at an advanced level. Promote active inquiry, experimentation, and discussion. Promote self-direction. Offer options that enable students to use strengths and preferred ways of learning. Use intellectual strengths to develop coping strategies.
- Assist in strengthening the student's self concept.

### **Classroom Dynamics**

- Discuss disabilities/capabilities and their implications with the class.
- Expect participation in all activities; strive for normal peer interactions.
- Facilitate acceptance; model and demand respect for all.
- Candidly answer peers' questions.
- Treat a child with a disability the same way a child without a disability is treated.
- Model celebration of individual differences.

Gifted students with disabilities must be provided with appropriate challenges. The personal and societal costs of not developing their potential cannot be overstated.

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<b>Standards, Policies, Laws</b>
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### **NAGC Position Papers**

The Board of Directors of the National Association for Gifted Children (NAGC) has passed many position papers; several of which are presented here. The Indiana Association for the Gifted has added its endorsement to the positions on Differentiation, Teacher Competencies, Ability Grouping, Mandated Opportunities, and Cooperative Learning.

#### **NAGC: Differentiation of Curriculum and Instruction**

NAGC periodically issues policy statements that deal with issues, policies, and practices that have an impact on the education of gifted/talented students. Policy statements represent the official convictions of the organization.

All policy statements approved by the NAGC Board of Directors are consistent with the organization's belief that education in a democracy must respect the uniqueness of all individuals, the broad range of cultural diversity present in our society, and the similarities and differences in learning characteristics that can be found within any group of students. NAGC is fully committed to national goals that advocate both excellence and equity for all students, and we believe that the best way to achieve these goals is through differentiated educational opportunities, resources, and encouragement for all students.

NAGC supports the provision of appropriate quality educational experiences for all students across the spectrum of ability, background, and achievement. The learning needs of gifted students often differ from those of other students and should be addressed through differentiation, a modification of curriculum and instruction based on the assessed achievement and interests of individual students.

To provide appropriate and challenging educational experiences for gifted students, differentiation may include:

- acceleration of instruction
- in-depth study
- a high degree of complexity
- advanced content
- variety in content and form

Problems occur when teachers attempt to meet the needs of gifted students by limiting learning experiences to:

- offering more of the same level of material or the same kind of problem;
- providing either enrichment or acceleration alone;
- focusing only on cognitive growth in isolation from affective, physical, or intuitive growth;
- teaching higher thinking skills (e.g., research or criticism) in isolation from academic content;

- presenting additional work that is just different from the core curriculum; and/or
- grouping with intellectual peers without differentiating content and instruction.

Differentiation for gifted students consists of carefully planned, coordinated learning experiences that extend beyond the core curriculum to meet the specific learning needs evidenced by the student. It combines the curricular strategies of enrichment and acceleration and provides flexibility and diversity. Appropriate differentiation allows for increasing levels of advanced, abstract, and complex curriculum that are substantive and that respond to the learner's needs. NAGC believes that the use of such differentiation is essential to maximize the educational experience for gifted and talented students. NAGC further believes that appropriate educational experiences for these students are more effective when differentiated materials and activities are planned in advance and easily accessible.

### **NAGC: Middle Schools**

NAGC applauds and supports the fundamental principles of the Middle School movement. We endorse in particular:

- an emphasis on individual student needs;
- teaching thinking strategies and decision-making;
- teacher as facilitator, rather than knowledge-giver;
- interdisciplinary curricula;
- encouraging students to work at their own pace;
- student membership in a "family" or home group;
- extension of learning beyond the textbooks.

In addition, NAGC believes that the flexible use of grouping for instruction and accelerated programs in content fields to match students' advanced abilities and knowledge can meet the needs of gifted students while maintaining the important social goals of the Middle School movement.

### **NAGC: Mandated Educational Opportunities for Gifted/Talented Students**

The National Association for Gifted Children supports mandating services to meet the unique needs of gifted/ talented children.

Numerous studies, including the federal report, "National Excellence: A Case for Developing America's Talent," released in November, 1993, have documented that the needs of our nation's gifted /talented students are not being met. Programs for these students are currently often viewed as extracurricular and are available only on a limited basis in some school systems, money permitting.

The needs of gifted/talented students have been well documented by research and federal studies.

To educate all our children and allow America to compete in a global economy and all fields of human endeavor, the nation must provide an environment in which gifted/talented students, along with all of our children, can reach their full potential.

### **NAGC: Competencies Needed by Teachers of Gifted and Talented Students**

The National Association for Gifted Children (NAGC) periodically issues policy statements dealing with issues, policies, and practices that have an impact on the education of gifted and talented students. Policy statements represent the official convictions of the organization.

All policy statements approved by the NAGC Board of Directors are consistent with the organization's belief that education in a democracy must respect the uniqueness of all individuals, the broad range of cultural diversity present in our society, and the similarities and differences in learning characteristics that can be found within any group of students. NAGC is fully committed to national goals that advocate both excellence and equity for all students, and we believe that the best way to achieve these goals is through differentiated opportunities, resources, and encouragement for all students.

NAGC believes that all children deserve the highest quality of instruction possible and that such instruction will only occur when teachers are aware of and able to respond to the unique qualities and characteristics of the students they instruct. Gifted and talented students present a particular challenge and often experience inadequate and inappropriate education. To provide appropriate learning experiences for gifted and talented students, teachers need to possess:

- a knowledge and valuing of the origins and nature of high levels of intelligence, including creative expressions of intelligence;
- a knowledge and understanding of the cognitive, social, and emotional characteristics, needs, and potential problems experienced by gifted and talented students from diverse populations;
- a knowledge of and access to advanced content and ideas;
- an ability to develop a differentiated curriculum appropriate to meeting the unique intellectual and emotional needs and interests of gifted and talented students; and
- an ability to create an environment in which gifted and talented students can feel challenged and safe to explore and express their uniqueness.

NAGC believes that these competencies, in addition to those required for good teaching and learning in general, such as modeling openness, curiosity, and enthusiasm, are necessary for teachers of gifted and talented students. NAGC also believes that educational experiences through comprehensive programming must be available for teachers to develop these competencies.

### **NAGC: Ability Grouping**

The practice of grouping, enabling students with advanced abilities and/or performance to be grouped together to receive appropriately challenging instruction, has recently come under attack. NAGC wishes to reaffirm the importance of grouping for instruction of gifted students. Grouping allows for more appropriate, rapid, and advanced instruction, which matches the rapidly developing skills and capabilities of gifted students.

Special attention should be given to the identification of gifted and talented students who may not be identified through traditional assessment methods (including economically

disadvantaged individuals, individuals of limited English proficiency, and individuals with handicaps), to help them participate effectively in special grouping programs.

Strong research evidence supports the effectiveness of ability grouping for gifted students in accelerated classes, enrichment programs, advanced placement programs, etc. Ability and performance grouping has been used extensively in programs for musically and artistically gifted students, and for athletically talented students with little argument. Grouping is a necessary component of every graduate and professional preparation program, such as law, medicine, and the sciences. It is an accepted practice that is used extensively in the education programs in almost every country in the western world.

NAGC does not endorse a tracking system that sorts all children into fixed layers in the school system with little attention to particular content, student motivation, past accomplishment, or present potential.

To abandon the proven instructional strategy of grouping students for instruction at a time of educational crisis in the U.S. will further damage our already poor competitive position with the rest of the world, and will renege on our promise to provide an appropriate education for all children. (Approved 11/91)

**Note: To obtain copies of other NAGC Position Papers on Acceleration, Preservice Teacher Preparation, Fine Arts Education, Addressing Affective Needs of Gifted Children, Inclusion, and Standards for Graduate Programs in Gifted Education please send a self-addressed, stamped envelope to the NAGC National Office, 1707 L Street, NW, Suite 550, Washington, DC 20036.**

## National Association for Gifted Children Pre-K–Grade 12 Gifted Program Standards

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### Introduction

This document delineates both *requisite* and *exemplary* standards for gifted education programming, and depicts pre-collegiate gifted programming standards for gifted education, representing a range of minimal, or requisite, and exemplary, or visionary, levels of performance. These standards may serve as benchmarks for measuring programming effectiveness; criteria for program evaluation; guidelines for program development; and recommendations for minimal requirements for high-quality gifted education programming.

Several **organizing principles** guided the work of the task force, including:

- Standards should encourage but not dictate approaches of high quality.
- Standards represent both requisite program outcomes and standards for excellence.
- Standards establish the level of performance to which all educational school districts and agencies should aspire.
- Standards represent professional consensus on critical practice in gifted education that most everyone is likely to find acceptable.
- Standards are observable aspects of educational programming and are directly connected to the continuous growth and development of gifted learners.

### Definitions

***Gifted education programming*** is a coordinated and comprehensive structure of informal and formal services provided on a continuing basis intended to effectively nurture gifted learners.

***A standard*** is a designated level of performance that programming must achieve for the criteria to be deemed a success (Worthen, Sanders, & Fitzpatrick, 1997).

***Gifted learners*** are “children and youth with outstanding talent who perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment” (U. S. Dept. of Education, 1993, p.3).

***Minimum standards*** include requisite conditions for acceptable gifted education programming practice.

***Exemplary standards*** designate desirable and visionary conditions for excellence in gifted education programming practice.

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### Gifted Education Programming Criterion: Student Identification

Description: Gifted learners must be assessed to determine appropriate educational services.

Guiding Principles	Minimum Standards	Exemplary Standards
1. A comprehensive and cohesive process for student nomination must be coordinated in order to determine eligibility for gifted education services.	<p>1.0M Information regarding the characteristics of gifted students in areas served by the district must be annually disseminated to all appropriate staff members.</p> <p>1.1M All students must comprise the initial screening pool of potential recipients of gifted education services.</p> <p>1.2M Nominations for services must be accepted from any source (e.g., teachers, parents, community members, peers, etc.).</p> <p>1.3M Parents must be provided information regarding an understanding of giftedness and student characteristics.</p>	<p>1.0E The school district should provide information annually, in a variety of languages, regarding the process for nominating students for gifted education programming services.</p> <p>1.1E The nomination process should be ongoing and screening of any student should occur at anytime.</p> <p>1.2E Nomination procedures and forms should be available in a variety of languages.</p> <p>1.3E Parents should be provided with special workshops or seminars to get a full meaning of giftedness.</p>
2. Instruments used for student assessment to determine eligibility for gifted education services must measure diverse abilities, talents, strengths, and needs in order to provide students an opportunity to demonstrate any strengths.	<p>2.0M Assessment instruments must measure the capabilities of students with provisions for the language in which the student is most fluent, when available.</p> <p>2.1M Assessments must be culturally fair.</p> <p>2.2M The purpose(s) of student assessments must be consistently articulated across all grade levels.</p> <p>2.3M Student assessments must be sensitive to the current stage of talent development.</p>	<p>2.0E Assessments should be provided in a language in which the student is most fluent, if available.</p> <p>2.1E Assessment should be responsive to students' economic conditions, gender, developmental differences, handicapping conditions, and other factors that mitigate against fair assessment practices.</p> <p>2.2E Students identified in all designated areas of giftedness within a school district should be assessed consistently across grade levels.</p> <p>2.3E Student assessments should be sensitive to all stages of talent development.</p>
3. A student assessment profile of individual strengths and needs must be developed to plan appropriate intervention.	<p>3.0M An assessment profile must be developed for each child to evaluate eligibility for gifted education programming services.</p> <p>3.1M An assessment profile must reflect the unique learning characteristics and potential and performance levels.</p>	<p>3.0E Individual assessment plans should be developed for all gifted learners who need gifted education.</p> <p>3.1E An assessment profile should reflect the gifted learner's interests, learning style, and educational needs.</p>
4. All student identification procedures and instruments must be based on current theory and research.	<p>4.0M No single assessment instrument or its results must deny student eligibility for gifted programming services.</p> <p>4.1M All assessment instruments must provide evidence of reliability and validity for the intended purposes and target students.</p>	<p>4.0E Student assessment data should come from multiple sources and include multiple assessment methods.</p> <p>4.1E Student assessment data should represent an appropriate balance of reliable and valid quantitative and qualitative measures.</p>
5. Written procedures for student identification must include at the very least provisions for informed consent, student retention, student reassessment, student exiting, and appeals procedures.	<p>5.0M District gifted programming guidelines must contain specific procedures for student assessment at least once during the elementary, middle, and secondary levels.</p> <p>5.1M District guidelines must provide specific procedures for student retention and exiting, as well as guidelines for parent appeals.</p>	<p>5.0E Student placement data should be collected using an appropriate balance of quantitative and qualitative measures with adequate evidence of reliability and validity for the purposes of identification.</p> <p>5.1E District guidelines and procedures should be reviewed and revised when necessary.</p>

### Gifted Education Programming Criterion: Professional Development

Description: Gifted learners are entitled to be served by professionals who have specialized preparation in gifted education, expertise in appropriate differentiated content and instructional methods, involvement in ongoing professional development, and who possess exemplary personal and professional traits.

Guiding Principles	Minimum Standards	Exemplary Standards
1. A comprehensive staff development program must be provided for all school staff involved in the education of gifted learners.	<p>1.0M All school staff must be made aware of the nature and needs of gifted students.</p> <p>1.1M Teachers of gifted students must attend at least one professional development activity a year designed specifically for teaching gifted learners.</p>	<p>1.0E All school staff should be provided ongoing staff development in the nature and needs of gifted learners, and appropriate instructional strategies.</p> <p>1.1E All teachers of gifted learners should continue to be actively engaged in the study of gifted education through staff development or graduate degree programs.</p>
2. Only qualified personnel should be involved in the education of gifted learners.	<p>2.0M All personnel working with gifted learners must be certified to teach in the area to which they are assigned, and must be aware of the unique learning differences and needs of gifted learners at the grade level at which they are teaching.</p> <p>2.1M All specialist teachers in gifted education must hold or be actively working toward a certification (or the equivalent) in gifted education in the state in which they teach.</p> <p>2.2M Any teacher whose primary responsibility for teaching includes gifted learners, must have extensive expertise in gifted education.</p>	<p>2.0E All personnel working with gifted learners should participate in regular staff development programs.</p> <p>2.1E All specialist teachers in gifted education should possess a certification/specialization or degree in gifted education.</p> <p>2.2E Only teachers with advanced expertise in gifted education should have primary responsibility for the education of gifted learners.</p>
3. School personnel require support for their specific efforts related to the education of gifted learners.	3.0M School personnel must be released from their professional duties to participate in staff development efforts in gifted education.	3.0E Approved staff development activities in gifted education should be funded at least in part by school districts or educational agencies.
4. The educational staff must be provided with time and other support for the preparation and development of the differentiated education plans, materials, curriculum.	4.0M School personnel must be allotted planning time to prepare for the differentiated education of gifted learners.	4.0E Regularly scheduled planning time (e.g., release time, summer pay, etc.) should be allotted to teachers for the development of differentiated educational programs and related resources.

### Gifted Education Programming Criterion: Socio-Emotional Guidance and Counseling

Description: Gifted education programming must establish a plan to recognize and nurture the unique socio-emotional development of gifted learners.

Guiding Principles	Minimum Standards	Exemplary Standards
1. Gifted learners must be provided with differentiated guidance efforts to meet their unique socio-emotional development.	1.0M Gifted learners, because of their unique socio- emotional development, must be provided with guidance and counseling services by a counselor who is familiar with the characteristics and socio-emotional needs of gifted learners.	1.0E Counseling services should be provided by a counselor familiar with specific training in the characteristics and socio-emotional needs (i.e., underachievement, multipotentiality, etc.) of diverse gifted learners.
2. Gifted learners must be provided with career guidance services especially designed for their unique needs.	2.0M Gifted learners must be provided with career guidance consistent with their unique strengths.	2.0E Gifted learners should be provided with college and career guidance that is appropriately different and delivered earlier than typical programs.
3. Gifted at-risk students must be provided with guidance and counseling to help them reach their potential.	3.0M Gifted learners who are placed at-risk must have special attention, counseling, and support to help them realize their full potential.	3.0E Gifted learners who do not demonstrate satisfactory performance in regular and/or gifted education classes should be provided with specialized intervention services.
4. Gifted learners must be provided with affective curriculum in addition to differentiated guidance and counseling services.	4.0M Gifted learners must be provided with affective curriculum as	4.0E A well defined and implemented affective curriculum scope and sequence containing personal/social awareness and adjustment, academic planning, and vocational and career awareness should be provided to gifted learners.
5. Underachieving gifted learners must be served rather than omitted from differentiated services.	5.0M Gifted students who are underachieving must not be exited	5.0E Underachieving gifted learners should be provided with specific guidance and counseling services that address the issues and problems related to underachievement.

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### Gifted Education Programming Criterion: Program Evaluation

Description: Program evaluation is the systematic study of the value and impact of services provided.

Guiding Principles	Minimum Standards	Exemplary Standards
1. An evaluation must be purposeful.	1.0M Information collected must reflect the interests and needs of most of the constituency groups.	1.0E Information collected should address pertinent questions raised by all constituency groups, and should be responsive to the needs of all stakeholders.
2. An evaluation must be efficient and economic.	2.0M School districts must provide sufficient resources for program evaluation.	2.0E School districts should allocate adequate time, financial support, and personnel to conduct systematic program evaluation.
3. An evaluation must be conducted competently and ethically.	3.0M Persons conducting the evaluation must be competent trustworthy. 3.1M The program evaluation design must address whether or not services have reached intended goals. 3.2M Instruments and procedures used for data collection must be valid and reliable for their intended use. 3.3M Ongoing formative and summative evaluation strategies must be used for substantive program improvement and development. 3.4M Individual data must be held confidential.	3.0E Persons conducting the evaluation should possess an expertise in program evaluation in gifted education. 3.1E The evaluation design should report the strengths and weaknesses found in the program as well as critical issues that might influence program services. 3.2E Care should be taken to ensure that instruments with sufficient evidence of reliability and validity are used, and that they are appropriate for varying age, developmental levels, gender, and diversity of the target population. 3.3E Formative evaluations should be conducted regularly with summative evaluations occurring minimally every five years or more often as specified by state or local district policies. 3.4E All individuals who are involved in the evaluation process should be given the opportunity to verify information and the resulting interpretation.
4. The evaluation results must be made available through a written report.	4.0M Evaluation reports must present the evaluation results in a clear and cohesive format.	4.0E Evaluation reports should be designed to present results and encourage follow-through by stakeholders.

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### Gifted Education Programming Criterion: Program Design

Description: The development of appropriate gifted education programming requires comprehensive services based on sound philosophical, theoretical, and empirical support.

Guiding Principles	Minimum Standards	Exemplary Standards
1. Rather than any single gifted program, a continuum of programming services must exist for gifted learners.	1.0M Gifted programming services must be accessible to all gifted learners.	1.0E Levels of services should be matched to the needs of gifted learners through the provision of a full continuum of options.
2. Gifted education must be adequately funded.	2.0M Gifted education funding should be equitable compared to the funding of other school programming.	2.0E Gifted education programming must receive funding consistent with the program goals and sufficient to adequately meet them.
3. Gifted education programming must evolve from a comprehensive and sound base.	3.0M Gifted education programming must be submitted for outside review on a regular basis.  3.1M Gifted programming must be guided by a clearly articulated philosophy statement and accompanying goals and objectives.  3.2M A continuum of services must be provided across grades pre-K–12.	3.0E Gifted education programming should be planned as a result of consultation with informed experts.  3.1E The school or school district should have a mission/philosophy statement that addresses the need for gifted education programming.  3.2E A comprehensive pre-K–12 program plan should include policies and procedures for identification, curriculum and instruction, service delivery, teacher preparation, formative and summative evaluation, support services, and parent involvement.
4. Gifted education programming services must be an integral part of the general education school day.	4.0M Gifted education programming should be articulated with the general education program.  4.1M Appropriate educational opportunities must be provided in the regular classroom, resource classroom, separate, or optional voluntary environments.	4.0E Gifted services must be designed to supplement and build on the basic academic skills and knowledge learned in regular classrooms at all grade levels to ensure continuity as students progress through the program.  4.1E Local school districts should offer multiple service delivery options as no single service should stand alone.
5. Flexible groupings of students must be developed in order to facilitate differentiated instruction and curriculum.	5.0M The use of flexible grouping of gifted learners must be an integral part of gifted education programming.	5.0E Gifted learners should be included in flexible grouping arrangements in all content areas and grade levels that ensures that gifted students learn with and from intellectual peers.
6. Policies specific to adapting and adding to the nature and operations of the general education program are necessary for gifted education.	6.0M Existing and future school policies must include	6.0E Gifted education policies should exist for at least the following areas: early entrance, grade skipping, ability grouping, and dual enrollment.

### Gifted Education Programming Criterion: Program Administration and Management

Description: Appropriate gifted education programming must include the establishment of a systematic means of developing, implementing, and managing services.

Guiding Principles	Minimum Standards	Exemplary Standards
1. Appropriately qualified personnel must direct services for the education of gifted learners.	1.0M The designated coordinator of gifted education programming must have completed coursework or staff development in gifted education and display leadership ability to be deemed appropriately qualified.	1.0E The designated gifted programming coordinator must have completed a certification program or advanced degree program in gifted education.
2. Gifted education programming must be integrated into the general education program.	2.0M The gifted education program must create linkages between general education and gifted education at all levels.	2.0E Responsibility for the education of gifted learners is a shared one requiring strong relationships between the gifted education program and general education schoolwide.
3. Gifted education programming must include positive working relationships with constituency and advocacy groups, as well as compliance agencies.	<p>3.0M Gifted programming staff must establish on-going parent communication.</p> <p>3.1M Gifted programs must establish and use an advisory committee that reflects the cultural and socio-economic diversity of the school or school district's total student population, and includes parents, community members, students, and school staff members.</p> <p>3.2M Gifted education programming staff must communicate with other on-site departments as well as other educational agencies vested in the education of gifted learners (e.g., other school districts, school board members, state departments of education, intermediate educational agencies, etc.).</p>	<p>3.0E The gifted education programming staff should facilitate the dissemination of information regarding major policies and practices in gifted education (e.g., student referral and screening, appeals, informed consent, student progress, etc.). to colleagues, parents, community members, etc.</p> <p>3.1E Parents of gifted learners should have regular opportunities to share input and make recommendations about program operations with the gifted programming coordinator.</p> <p>3.2E The gifted education program should consider current issues and concerns from other educational fields and agencies regarding gifted programming decision making on a regular basis.</p>
4. Requisite resources and materials must be provided to support the efforts of gifted education programming.	<p>4.0M Resources must be provided to support program operations.</p> <p>4.1M Technological support must be provided for gifted education programming services.</p> <p>4.2M The library selections must reflect a range of materials including those appropriate for gifted learners.</p>	<p>4.0E A diversity of resources (e.g., parent, community, vocational, etc.) should be available to support program operations.</p> <p>4.1E Gifted education programming should provide state-of-the-art technology to support appropriate services.</p> <p>4.2E The acquisition plan for purchasing new materials for the school should reflect the needs of gifted learners.</p>

### Gifted Education Programming Criterion: Curriculum and Instruction

Description: Gifted education services must include curricular and instructional opportunities directed to the unique needs of the gifted child.

Guiding Principles	Minimum Standards	Exemplary Standards
1. Differentiated curriculum for the gifted learner must span grades pre-K–12.	1.0M Differentiated curriculum (curricular and instructional adaptations that address the unique learning needs of gifted learners) for gifted learners must be integrated and articulated throughout the district.	1.0E A well-defined and implemented curriculum scope and sequence should be articulated for all grade levels and all subject areas.
2. Regular classroom curricula and instruction must be adapted, modified, or replaced to meet the unique needs of gifted learners.	2.0M Instruction, objectives, and strategies provided to gifted learners must be systematically differentiated from those in the regular classroom. 2.1M Teachers must differentiate, replace, supplement, or modify curricula to facilitate higher level learning goals. 2.2M Means for demonstrating proficiency in essential regular curriculum concepts and processes must be established to facilitate appropriate academic acceleration. 2.3M Gifted learners must be assessed for proficiency in basic skills and knowledge and provided with alternative challenging educational opportunities when proficiency is demonstrated	2.0E District curriculum plans should include objectives, content, and resources that challenge gifted learners in the regular classroom. 2.1E Teachers should be responsible for developing plans to differentiate the curriculum in every discipline for gifted learners. 2.2E Documentation of instruction for assessing level(s) of learning and accelerated rates of learning should demonstrate plans for gifted learners based on specific needs of individual learners. 2.3E Gifted learners should be assessed for proficiency in all standard courses of study and subsequently provided with more challenging educational opportunities.
3. Instructional pace must be flexible to allow for the accelerated learning of gifted learners as appropriate.	3.0M A program of instruction must consist of advanced content and appropriately differentiated teaching strategies to reflect the accelerative learning pace and advanced intellectual processes of gifted learners.	3.0E When warranted, continual opportunities for curricular acceleration should be provided in gifted learners' areas of strength and interest while allowing sufficient ceiling for optimal learning.
4. Educational opportunities for subject and grade skipping must be provided to gifted learners.	4.0M Decisions to proceed or limit the acceleration of content and grade acceleration must only be considered after a thorough assessment.	4.0E Possibilities for partial or full acceleration of content and grade levels should be available to any student presenting such needs.
5. Learning opportunities for gifted learners must consist of continuum of differentiated curricular options, instructional approaches, and resource materials.	5.0M Diverse and appropriate learning experiences must consist of a variety of curricular options, instructional strategies, and materials. 5.1M Flexible instructional arrangements (e.g., special classes, seminars, resource rooms, mentorships, independent study, and research projects) must be available.	5.0E Appropriate service options for each student to work at assessed level(s) and advanced rates of learning should be available. 5.1E Differentiated educational program curricula for students pre-K–12 should be modified to provide learning experiences matched to students' interests, readiness, and learning style.

## **Indiana Law: What Is Your School Required to Provide?**

By Ginny Burney, Indiana Association for the Gifted

The usual progression for parents of high ability children is to go to their child's teacher and report that the material seems too easy, that the child has already mastered the topics, or that the child is bored, losing interest in school, learning to hide his/her abilities, and learning that he/she doesn't have to apply him/herself to do well. The teachers say they cannot move the child ahead because of difficulties that would create for next year's teacher; they may offer to do something different occasionally but they lack time for a consistent effort because of the needs of the others. The parent seeks more help, moving up the chain of command. The principal tells the parent what is available (or not) at different grade levels in terms of a special program. If there is a special program, it may not be in that child's grade, or it might not be at that child's school; it may be only for enrichment and perhaps only for a few hours a week. The superintendent points out the school corporation is not required by the state to provide any special services and funding is inadequate. The Indiana Department of Education reports that there is no law requiring services and hence they have no authority to require the school to provide anything for the child other than grade level curriculum. The legislature expresses its reluctance to impose requirements upon the schools. Any new legislative efforts at instating requirements are actively and overwhelmingly resisted by school boards and superintendents unless accompanied by new funding. The problem is that meeting the regular educational needs of high ability students has been seen as a "special" program requiring "extra" funding, not required, and therefore, optional and expendable.

### **What about the state?**

The Indiana Department of Education (IDOE) is under the direction of an elected Superintendent of Public Instruction, currently Dr. Suellen Reed. IDOE has a Division of Exceptional Learners that is under the direction of the Associate Superintendent (currently Mr. Robert Marra) who oversees program services for students with disabilities and those of high ability. The state is divided into nine geographic regions that each has an Education Service Center (ESC). The ESCs coordinate many types of services, including some related to Gifted and Talented, for the school districts in their areas. There are also four libraries in the state called Shared Information Services (SIS) that lend materials relating to Gifted and Talented to parents and teachers upon request. The DOE distributes the money that is allocated by the legislature for Gifted and Talented. This is a little less than \$7,000,000 per year. It is used to fund the IDOE's Division of Exceptional Learners Gifted and Talented staff, the personnel and services provided through the ESCs and the SISs, and all grants to school corporations. When this is spread over the 90,000 identified students in Indiana, it amounts to about \$78 per child, which covers all services: local, regional, and state. School corporations may apply for a grant from the monies available; those range from about \$14,000-\$90,000; the average grant is a little over \$20,000. In order to receive a grant, schools must comply with certain provisions. Their grant applications may be viewed online through the G/T website at [www.doe.state.in.us/gt/](http://www.doe.state.in.us/gt/). Schools self report regarding compliance; there is no field visitation.



### **What Exactly Is the Law in Indiana?**

There are two areas of the law that may be of interest regarding gifted education: the code as it relates to High Ability Students and as it relates to Advanced Placement courses.

#### **IC 20-10.1-5.1 - Chapter 5.1. Education Programs for High Ability Students**

IC 20-10.1-5.1-1 Sec. 1. As used in this chapter, "domain" includes the following areas of aptitude and talent: (1) General intellectual. (2) General creative. (3) Specific academic. (4) Technical and practical arts.

(5) Visual and performing arts. (6) Interpersonal. As added by P.L.34-1998, SEC.2.

IC 20-10.1-5.1-2 Sec. 2. As used in this chapter, **"high ability student" means a student who: (1) performs at, or shows the potential for performing at, an outstanding level of accomplishment in at least one (1) domain when compared to other students of the same age, experience, or environment; and (2) is characterized by exceptional gifts, talents, motivation, or interests.** As added by P.L.34-1998, SEC.2.

IC 20-10.1-5.1-3 Sec. 3. The department shall establish a state resources program using existing state resources that: (1) supports school corporations in the development of local programs for high ability students; (2) enables educational opportunities that encourage high ability students to reach the highest possible level at every stage of the students' development; and (3) provides state integrated services that include, but are not limited to, the following: (A) Information and materials resource centers. (B) Professional development plan and programs. (C) Research and development services. (D) Technical assistance that includes the following: (i) Student assessment. (ii) Program assessment. (iii) Program development and implementation. As added by P.L.34-1998, SEC.2.

IC 20-10.1-5.1-4 Sec. 4. **A governing body may do the following:**

**(1) Develop and periodically update a local plan to provide appropriate educational experiences to high ability students in the school corporation in kindergarten through grade 12. The plan must include the following components: (A) The establishment of a broad-based planning committee that meets periodically to review the LEA plan for high ability students. The committee must have representatives from diverse groups representing the school and community. (B) Student assessment. (C) Professional development. (D) Development and implementation of a local program for high ability students. (E) Evaluation of the local program for high ability students.**

**(2) Provide a local program for high ability students in accordance with the plan** that the governing body develops under subdivision (1) for the high ability students in the school corporation in kindergarten through grade 12. As added by P.L.34-1998, SEC.2. Amended by P.L.1-1999, SEC.48.

**Indiana Administrative Code: TITLE 511 INDIANA STATE BOARD OF  
EDUCATION**

**Rule 9.1. Waiver of Curriculum and Graduation Rules for Programs for High Ability  
Students**

511 IAC 6-9.1-1 **Definitions** Authority: IC 20-1-1-6; IC 20-1-1.2-18 Affected: IC 20-1-1.2; IC 20-10.1-5.1 Sec. 1. (a) The definitions in this section apply throughout this rule.

(b) **“Broad-based planning committee”** means a diverse group with representation from: (1) educators; (2) parents; (3) students; (4) community members; and (5) other stakeholders; organized for the purposes of planning and development of programs.

(c) **“Differentiated”** means providing tiered levels of services for all educational needs.

(d) **“Domain”** includes the following areas of aptitude and talent: (1) General intellectual. (2) General creative. (3) Specific academic. (4) Technical and practical arts. (5) Visual and performing arts. (6) Interpersonal.

(e) **“General creative”** means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to activities, such as: (1) problem finding; (2) divergent thinking; (3) flexibility; (4) elaboration; and (5) originality.

(f) **“General intellectual”** means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to a broad array of disciplines.

(g) **“Governing body”** means the township trustee and township board of a school township, the board of school commissioners, board of school trustees, or any other board charged by law with the responsibility of administering the affairs of a school corporation.

(h) **“High ability student”** means a student who: (1) performs at, or shows the potential for performing at, an outstanding level of accomplishment in at least one (1) domain when compared to other students of the same age, experience, or environment; and (2) is characterized by exceptional gifts, talents, motivation, or interests.

(i) **“Interpersonal”** means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to areas, such as: (1) leadership; (2) mediation; (3) counseling; and (4) communication.

(j) **“Multifaceted assessment”** means collecting and analyzing data to identify the educational needs of high ability students through the following:

(1) **Performance-based assessment**, which includes evaluating the performance of students involved in complex learning opportunities through the use of instruments, such as the following: (A) Rating scales. (B) Observation or interviews. (C) Portfolios. (D) Structured observations or interviews.

(2) **Potential-based assessment**, which includes evaluating the potential performance of high ability students through the use of instruments, such as the following: (A) Standardized intelligence tests. (B) Standardized achievement tests. (C) Behavior rating scales.

(3) **Other forms of assessment**, which includes *[sic., include]* using procedures **designed to reduce any assessment biases** that may be inherent in other

assessment methods used to evaluate the levels of services needed for high ability students.

(k) “Program” means educational services differentiated in depth and breadth designed to meet the needs of one (1) or more high ability students through activities, such as: (1) compacting; (2) acceleration; (3) enrichment; (4) problem solving; and (5) creative thinking.

(l) “Specific academic” means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to specific disciplines, such as: (1) English language arts; (2) social studies; (3) foreign languages; (4) mathematics; and (5) sciences.

(m) “Technical and practical arts” means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to disciplines, such as: (1) vocational-technical education; (2) business technology education; (3) family and consumer sciences; and (4) technology education.

(n) “Visual and performing arts” means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to disciplines, such as: (1) art; (2) dance; (3) music; and (4) theater arts.

*(Indiana State Board of Education; 511 IAC 6-9.1-1; filed Nov 1, 1999, 2:40 p.m.: 23 IR 564)*

511 IAC 6-9.1-2 Program requirements Authority: IC 20-1-1-6; IC 20-1-1.2-18 Affected: IC 20-1-1.2; IC 20-10.1-5.1

**Sec. 2. (a) To qualify as a program for high ability students under this rule, each school corporation shall meet all of the criteria in this section.**

**(b) The school corporation shall develop and periodically update a level of services program to provide educational opportunities to encourage high ability students to reach the highest possible level at every stage of development.**

**(c) The differentiated program for high ability students must include the following: (1) A multifaceted student assessment plan, including the following: (A) Performance-based assessment. (B) Potential-based assessment. (C) Other forms of assessment. (2) A curriculum and instructional strategies plan. (3) A counseling and guidance plan. (4) A systematic program assessment plan. (5) A professional development plan.**

**(d) Educational experiences offered outside the school day may be used to supplement, but not to supplant, the levels of services provided for high ability students offered during the school day.**

**(e) The governing body shall create a broad-based planning committee to design and monitor the continuous development and implementation of the levels of services program for high ability students.**

**(f) The program must be approved by the governing body.**

**(g) The plans described in subsection (c) must be available for public inspection and filed with the department. *(Indiana State Board of Education; 511 IAC 6-9.1-2; filed Nov 1, 1999, 2:40 p.m.: 23 IR 565)***

511 IAC 6-9.1-3 Rule waivers Authority: IC 20-1-1-6; IC 20-1-1.2-18 Affected: IC 20-1-1.2; IC 20-10.1-5.1

Sec. 3. (a) Upon proper submission of the appropriate forms by a school corporation, the department may waive, for programs for high ability students, any of the following curriculum or graduation rules:

(1) 511 IAC 6-7-1(d), 511 IAC 6.1-1-2(d), and, for summer school, 511 IAC 12-2-6(a) to allow gifted and talented students to earn credit through performance assessment without completing the required amount of instructional time.

(2) 511 IAC 12-2-6(b) to allow school corporations to be reimbursed for the cost of instruction for more than two (2) credits in summer school for high ability students.

(3) 511 IAC 6.1-6-1(a) to allow school corporations to utilize adults who have the demonstrated expertise in an area, but not the prerequisite teacher certification, to deliver nonstandard education programs for high ability students, such as: (A) internships; (B) mentorships; or (C) clinical experiences.

(b) The school corporation may appeal a denial of a waiver to the state board. (*Indiana State Board of Education; 511 IAC 6-9.1-3; filed Nov 1, 1999, 2:40 p.m.: 23 IR 565*)

#### **IC 20-10.1-22.2 Chapter 22.2. Program for the Advancement of Math and Science IC 20-10.1-22.2-1**

Sec. 1. As used in this chapter, "advanced course" refers to an advanced placement course for a particular subject area as authorized under this chapter.

*As added by P.L.52-1990, SEC.8. Amended by P.L.19-1992, SEC.40.*

#### **IC 20-10.1-22.2-2**

Sec. 2. As used in this chapter, "advanced placement examination" refers to the advanced placement examination sponsored by the College Board of the Advanced Placement Program.

*As added by P.L.52-1990, SEC.8.*

#### **IC 20-10.1-22.2-3**

Sec. 3. As used in this chapter, "program" refers to the advanced placement program established under section 4 of this chapter.

*As added by P.L.52-1990, SEC.8. Amended by P.L.19-1992, SEC.41.*

#### **IC 20-10.1-22.2-4**

Sec. 4. (a) The advanced placement program is established to encourage students to pursue advanced courses, particularly in math and science. The program shall be administered by the department.

(b) Unexpended money appropriated to the department to implement the program at the end of a state fiscal year does not revert to the state general fund.

*As added by P.L.52-1990, SEC.8. Amended by P.L.19-1992, SEC.42.*

#### **IC 20-10.1-22.2-5**

Sec. 5. (a) Beginning:

(1) July 1, 1990, each school corporation may provide the College Board's science and math advanced placement courses; and

(2) July 1, 1993, and every school year thereafter, each school corporation may

provide additional College Board advanced placement courses; in secondary schools for students who qualify to take the advanced placement courses.

(b) Beginning July 1, 1994, each school corporation shall provide the College Board's science and math advanced placement courses in secondary schools for students who qualify to take the advanced placement courses.

(c) In addition to the College Board's math and science advanced placement tests, the state board may approve advanced placement courses offered by a state educational institution (as defined in IC 20-12-0.5-1) in collaboration with a school corporation if the state educational institution and the collaborating school corporation demonstrate to the state board that the particular advanced placement course satisfies the objectives of this chapter.

*As added by P.L.52-1990, SEC.8. Amended by P.L.19-1992, SEC.43.*

#### **IC 20-10.1-22.2-6**

Sec. 6. (a) Each student who enrolls in an advanced course may take the advanced placement examination to receive high school credit for the advanced course.

(b) Any rule adopted by the department concerning an academic honors diploma must provide that a successfully completed mathematics or science advanced course is credited toward fulfilling the requirements of an academic honors diploma.

(c) If a student who takes an advanced placement examination receives a satisfactory score on the examination, the student is entitled to receive a certificate of achievement for the subject area included in the advanced placement examination.

*As added by P.L.52-1990, SEC.8. Amended by P.L.19-1992, SEC.44; P.L.340-1995, SEC.79.*

#### **IC 20-10.1-22.2-7**

Sec. 7. Teachers who are assigned to teach an advanced course may participate in summer training institutes offered by the College Board.

*As added by P.L.52-1990, SEC.8.*

#### **IC 20-10.1-22.2-8**

Sec. 8. (a) Money appropriated to the department to implement the program shall be distributed for the purposes listed below in the following order:

(1) To pay the fees for each math or science advanced placement examination that is taken by a student who is: (A) enrolled in a public secondary school; and (B) a resident of Indiana.

Priority shall be given to paying the fees for each math or science advanced placement examination that is taken by a student in grade 11 or 12.

(2) To pay stipends for teachers assigned to teach a math or science advanced course to attend the institutes under section 7 of this chapter.

(3) To pay school corporations for instructional materials needed for the math or science advanced course.

(4) To pay for or rent equipment that a school corporation may need to develop a math or science advanced course.

(5) To pay the fees for the costs incurred in implementing the advanced placement program for the subjects other than math and science as authorized under section 5 of this chapter.

(b) The department shall establish guidelines concerning the distribution of funds

under this chapter, including guidelines to ensure that money distributed under this chapter is distributed as evenly as possible throughout Indiana. In establishing these distribution guidelines, the department shall consider the following factors:

- (1) The number of students and teachers participating in the program.
- (2) Even geographic representation.
- (3) Financial need of students participating in the program.
- (4) Any other factor impacting on the distribution of money under this chapter.

*As added by P.L.52-1990, SEC.8. Amended by P.L.19-1992, SEC.45.*

#### **IC 20-10.1-22.2-9**

Sec. 9. The department shall develop and provide each public secondary school with curriculum guidelines designed to satisfy the requirements of this chapter.

*As added by P.L.52-1990, SEC.8.*

#### **IC 20-10.1-22.2-10**

Sec. 10. The department shall prepare an annual report concerning the implementation of the program and shall submit this report to the board before December 1 of each year. The report must include the pertinent details of the program, including the following:

- (1) The number of students participating in the program.
- (2) The number of teachers attending a summer institute offered by the College Board.
- (3) Recent trends in the field of advanced placement.
- (4) The distribution of money under this program.
- (5) Other pertinent matters.

*As added by P.L.52-1990, SEC.8.*

#### **IC 20-10.1-22.2-11**

Sec. 11. Each state educational institution (as defined in IC 20-12-0.5-1) shall work with the department in the development of a policy of granting academic credit and advanced placement to students who attend the state educational institution and who receive a satisfactory score as determined by the state educational institution on the advanced placement examination.

*As added by P.L.52-1990, SEC.8.*

#### **IC 20-10.1-22.2-12**

Sec. 12. The board shall adopt rules under IC 4-22-2 to implement this chapter.

*As added by P.L.52-1990, SEC.8.*

## **A Plan for Advocacy: Assessing the Local Gifted Program and Advocating for Your Child**

By Bonita Warrum and Ginny Burney

What is offered for gifted students in your school corporation? How well is the gifted program in your child's school meeting his or her needs? What do you do if your child's needs are not being met? These are important questions, yet difficult ones to answer. Where should you start?

Before you begin, some cautionary advice is in order. When a person begins investigating a school program and asking questions (what is the program? what is the law in relation to that program? what standards should the program be following?), a common response of those being questioned is to wonder why. They may feel that you are dissatisfied with the work they are doing and being critical of them. A positive working relationship is important, and change is most likely to occur when the advocate approaches his/her task with these things in mind:

- Use good sense, good humor and good manners.
- Be professional in your approach and respectful of others' points of view; be articulate and tactful.
- Be aware of the decision-making process and chain of command in the organization, and act accordingly.
- Prepare well for your meetings; be well-organized and accurate in your reporting. Do not exaggerate and do not be emotional, but provide specific examples and anecdotes to illustrate your points.
- Be calmly persistent and do not be afraid to ask questions.
- Be prepared with practical suggestions and reasonable goals for progress.

Another note of caution: Don't expect changes overnight. Advocacy is a process, not an event. Change is possible, but it takes time.

**A. Become Informed About Schools and Requirements.** An effective advocate is well informed.

1. Know state requirements. The state of Indiana does not require that schools provide services for high ability students, but it does make grant money available to school corporations for use in providing high ability programming. To obtain the grant money, a school corporation must meet the requirements outlined in Indiana Rule 511.
  - a. One of the requirements is that the school corporation must maintain a document called a Level of Services Program Plan, and must make this document accessible for public review. This document outlines the high ability services provided by the school corporation. A complete view of Rule 511 is found at [www.doe.state.in.us/gt/legislation/indianacode.html](http://www.doe.state.in.us/gt/legislation/indianacode.html) or in the preceding article by Ginny Burney.
  - b. Another requirement is that the school corporation have a Broad Based Planning Committee (BBPC) which serves to oversee the planning and

implementation of high ability programs. Interested parents should volunteer to serve on this committee. Whether or not you serve, you should find out what is happening on this committee. If high ability services are not being developed and improved via this committee, contact the committee's chairperson and find out why.

- c. Although there are other requirements in Rule 511, the final one we will discuss here is multifaceted student assessment. School corporations that receive G/T grant money must identify the students that they place in high ability programs using a multifaceted assessment. This basically means that students must be selected using more than one method or criterion, and that the process must include potential- based assessment (such as IQ), performance-based assessment (such as an achievement test), and other criteria.
2. Gather information about your school. Call the school corporation office and ask who the G/T Coordinator or contact person is. Introduce yourself; tell this person that you suspect your child might be gifted and you are interested in learning more about what your school system has to offer.
    - a. Learn about the district G/T Plan. Ask for a description of the district program for gifted or high ability students. Ask to review the Level of Services Program Plan.
    - b. Visit the Indiana Department of Education (IDOE) Website [www.doe.state.in.us/gt/](http://www.doe.state.in.us/gt/) for G/T grant data. Look up your school corporation and review what they have submitted to the state department as their gifted program data. Contact your school corporation's G/T coordinator with any questions.
    - c. Learn about your school corporation. Visit the Indiana Department of Education's (IDOE) website and look at other relevant information about your school corporation. Go to [www.doe.state.in.us](http://www.doe.state.in.us); click on K-12 School Data; click on Data for One School; enter your school corporation name. Review the statistical profile, the benchmarks, and the Annual Performance Report. Learn about your district's and school's ISTEP scores, SAT scores, Advanced Placement statistics, number of students going to college, percentage of students identified as gifted. Compare your school and district to the top ten in the state. Compare your school and district with other area schools and schools with similar demographics but higher SAT scores, more students involved in AP courses, and more extensive G/T programs. The purpose of this comparative review is to determine whether or not your school district offers more or less than other area schools and other similar schools.

(Note: Even if your children are in the elementary grades, it is important to look at SAT and AP statistics. A school corporation must lay the groundwork in the early grades for students to be able to take AP courses in high school. Schools that have large numbers of students taking AP courses probably are taking the appropriate steps in the lower grades to prepare their students for rigorous study.)



3. Review the information and chart out for yourself what is offered and when.
  - a. At what grade level are children screened to determine if they might need services for high ability? Research indicates that the sooner a gifted child is identified and served, the better.
  - b. Are they re-screened at higher grade levels? Children do not develop at the same rate. Especially at the lower grade levels, a gifted child may not be identified when first tested. This is especially true in gifted children who are not early readers.
  - c. What about children who move in after the screening takes place? Are students identified at middle school or high school? All gifted students in the corporation deserve to be identified and served.
  - d. What criteria are used to determine who receives services? It should be a multifaceted assessment as is required in Indiana Rule 511.
  - e. What services are actually provided? Use the National Association for Gifted Children's Pre-K-12 Gifted Program Standards as a benchmark for determining the quality of the services provided. These program standards can be found in this Resource Guide or at <http://www.nagc.org/new/prekto12.htm>.
  - f. How many teachers have a G/T endorsement, meaning that they are specially trained to teach gifted students? Trained teachers and coordinators are the foundation of good gifted programs.
  - g. Does your school have a Program or is it merely making Provisions?
    - Provisions are fragmentary, unarticulated, and temporary activities, which are neither followed-up in any meaningful way nor preceded by any meaningful lead-in activity.
    - Programs are clearly articulated and are comprised of these components: Needs Assessment, Definition, Identification Plan, Goals, Program Organization, Staff Selection and Training, Curriculum Development, and Evaluation. (Taken from a presentation by Dr. Cheryll Adams, 2000.)
4. Compare the information you have gathered with what you know is required. Ask questions to fill in your understanding of the local program. If you have questions about local compliance or even if you do not, volunteer to be a part of the local BBPC to help the program develop and become all it should be. Remember, the goal is not to alienate school personnel, but to work with them to meet the students' needs.

## **B. Assess your child and his/her needs.**

1. Find out as much as you can about your child. State law does not require that all students be tested each year, or that children be tested at all for giftedness. If your child has not been tested at school, and you suspect that he may be gifted, pursue individual, independent testing to determine if your child is gifted. Testing can be arranged through Ball State University, Purdue University, or through independent psychologists in your area. Unless you have test results, all you have is a "feeling" that your child needs special services. Usually, you will receive educational

recommendations along with the test results. You can use these to discuss your child's needs with the school.

2. Assess how well the school is meeting the needs of your child. Listen to your child. Is he happy with school? Does he enjoy his school work? Does he find anything a challenge? Is what he reads at home of similar difficulty to what he reads at school?
3. Begin to learn all you can about gifted education in general.
  - a. Start with a copy of the Indiana Association for the Gifted's Resource Guide. It contains lots of basic information and tips on how to find out more. To obtain one of these, contact the Gifted and Talented Division of the IDOE at (317) 233-3728.
  - b. Visit The Indiana Association for the Gifted's website at [www.iag-online.org](http://www.iag-online.org) for information on how to join the state association, attend the annual conference, follow current relevant legislation, find related websites and more.
  - c. Contact your area Shared Information Services. They are a lending library of materials and information relating to gifted education. For more information go to [www.bsu.edu/teachers/services/sis/](http://www.bsu.edu/teachers/services/sis/).

#### **C. Become an active participant in your child's school and district.**

1. Start with the teacher. Make an appointment to talk with your child's teacher. Tell the teacher of any concerns you have in regard to your child; be very tactful and respectful. Remember that teachers are professionals. Ask what he/she has observed about your child. Listen carefully. Ask what kinds of opportunities might be available to your child. Suggest possible alternatives including things you can do. Express your desire to work with the teacher.
2. Become an active participant at school. Volunteer. Visit with the principal. Express interest in the work of the School Improvement Team; volunteer to be a member.
3. Become involved at the district level. Attend local school board meetings. Visit with the G/T Coordinator for the district. Attend the meetings of the G/T Parent Support Group, if there is one. If there is not, offer to help the Coordinator organize a parent information night. Help organize regular meetings of parents of high ability students in your area to facilitate communication, growth and positive change. In all meetings, express support for the things that are working, consider how things could be improved. Volunteer to be a part of the Broad Based Planning Committee.

#### **D. Become active at the state and national levels.**

1. Volunteer to help in an area of your interest in IAG. Apply to be on a committee or become a member of the board.
2. Contact your state representative and state senator. Introduce yourself and tell them of your concerns about educational issues. Express your concern that more funding

is needed for teacher training in gifted education and for local efforts to improve gifted programs. To find out who your legislator is, go to [www.vote-smart.org/index.phtml](http://www.vote-smart.org/index.phtml), enter your zip + 4, and find your Indiana Senator and House Representative. Federal representatives are also listed.

3. Pay attention to education legislation. Contact your legislators to let them know how you want them to vote on issues and tell them why. Your personal experience matters to them. They listen to their constituents. Go to [www.state.in.us](http://www.state.in.us); click on Indiana General Assembly; click on Legislators; click on How to Contact Your Legislator. Send an email, letter or phone call.
4. Testify before the Indiana Senate and/or the House Education Committees when legislation is being presented.
5. Join the National Association for Gifted Children. Their website is at [www.nagc.org](http://www.nagc.org).
6. Pay attention to national legislation on gifted education. Contact your congressional representatives and let them know what your experience is and how you want them to vote.

### **Taking Action - Local Advocacy**

1. Advocate for overall G/T program improvement.
  - a. Analyze your school corporation's strengths and weaknesses in gifted education and determine what YOU think they should do.
  - b. Make proposals to the G/T coordinator and/or the BBPC.
  - c. If G/T coordinator and BBPC are not responsive, either talk to the superintendent or schedule a time to make a presentation to the school board.  
When presenting your proposal,
    - i. Be businesslike and professional
    - ii. Be succinct
    - iii. Make it clear what you want
    - iv. Include how you think it could be accomplished (action plan)
    - v. Assess costs to implement and include an estimate in proposal
    - vi. Include reasons for why this is needed
    - vii. Include an estimated timeline
    - viii. Obtain a copy of the mission statement, philosophy statement, or other such statement from the school corporation regarding gifted education. If they don't have one, obtain a copy of the corporation's philosophy statement. Look for statements regarding "challenging curriculum" or "to their highest potential", etc. Use these statements as talking points in discussions about the needs of high ability students.
2. Advocate for your child's needs.
  - a. Analyze your child's current education program and list specific areas of concern.

- b. Determine what YOU think he needs. (for example, Math is not challenging enough – needs more challenging math instruction. Reading is too easy for him - needs more challenging reading instruction.)
  - c. Early entrance and grade skipping are valid options – use them when appropriate.
  - d. Be prepared to suggest various ways of achieving what you want. (Can we use an independent math instruction program on the computer? Can we let him go to another grade level classroom for reading? Can we group the higher ability readers in his class and let them read more challenging material? Can we use curriculum compacting? Other G/T strategies?)
  - e. If possible, collect real-life examples of how this issue is addressed in other schools.
  - f. Schedule a meeting with his teacher to discuss your concerns. Try to reach an agreement on what will be done to meet his needs. FOLLOW-UP with a letter outlining what you have agreed to. FOLLOW-UP if the agreed-upon actions do not happen. PRAISE the teacher if actions are taken and are positive.
  - g. If issues are not resolved through meeting with the teacher, meet with the principal, then the G/T coordinator, etc. Follow the chain of command.
  - h. Hire a consultant if you need advice, support, assistance.
  - i. Remember that anything that happens this year needs to be coordinated with next year's teacher. Provisions are only temporary. What you need is an articulated K-12 G/T program in your school. Seek first to get your child's needs met in the short term, then advocate for a long-term solution --- a quality G/T program.
3. Follow the "Chain of Command."
- a. If dealing with your child's specific needs, start with his teacher or counselor (if applicable). It also may be appropriate to work with the building principal.
  - b. If dealing with general G/T program issues, start with G/T coordinator.
  - c. Broad Based Planning Committee (BBPC)
  - d. Superintendent
  - e. School board
  - f. Indiana Department of Education (DOE)
  - g. Governor
  - h. Hire a consultant if you need assistance.
4. Follow these advocacy tips.
- a. Take plenty of notes during and after phone conversations and meetings. Include date and persons in attendance.
  - b. ALWAYS follow-up in writing. If your school principal just said on the telephone that he will have the counselor give your child a screening test, then send him a follow-up letter stating what you agreed to.
  - c. Always pin down timing on action items. If your child's teacher says that she will get a more challenging math book for him, ask her when she thinks she can have this completed. Then follow-up if the timing is not met.

- d. Understand grading implications. If special accommodations will be made for your child, how will that work affect his grade? Will the grade on his report card be based on how he does on the advanced material? Or will he, instead, “test out” of the grade level material and receive an “A” for mastering that material?
5. Be prepared for these common roadblocks.
- a. “We can’t let your daughter work ahead in math. If she gets into next year’s material, what will she do next year?” Coordination from year to year can be as simple as communicating to the next grade level teacher where the child is in her math skills and math curriculum. The next teacher can take up where the other left off. An articulated G/T program for the whole school, however, is the best solution, rather than individual provisions.
  - b. “We can’t let your son go to the 2<sup>nd</sup> grade classroom for reading. They have reading at a different time than the 1<sup>st</sup> graders.” Find out what the 1<sup>st</sup> graders are doing during 2<sup>nd</sup> grade reading. Perhaps he can miss it or make up that work during 1<sup>st</sup> grade reading. Perhaps there are other 1<sup>st</sup> graders who are advanced – they could be grouped during 1<sup>st</sup> grade reading time. Or, perhaps alignment of schedules for subjects across grade levels is a good topic of discussion in the BBPC, if it would allow students to work at the level they need.
  - c. “We do not let children skip a grade or begin Kindergarten early. It is not good for them socially.” Research is very clear on this subject. Grade skipping or early entrance is an excellent strategy for helping to meet gifted children’s needs, especially in the absence of a quality gifted education program. Experts say highly gifted students will require two grade skips throughout their education years. Research indicates that children who skip a grade or enroll early do not suffer social problems but, on the contrary, benefit from being with children who are more their level academically and mentally.
  - d. “We can’t do anything special for your child---this is a public school.” Become familiar with what other public schools in your area and across the state are doing. Be ready to propose what you want done and how it could be accomplished. Volunteer to help, if you can.
  - e. “We don’t know how to test your child.” Every textbook has tests at the end of units. Ask that your child be allowed to take the end-of-unit tests in the subject areas in question. This is especially easy to do in math. For language arts, perhaps the child would be permitted to read selected material from the text and take the tests on the reading. Standardized tests are also available and can be administered to determine a child’s IQ or achievement level.
  - f. “We don’t have any money in the budget to provide these special services.” Note first that you feel that your child has a right to have his educational needs met, not simply if they have special money earmarked. Then note that gifted students’ needs can be met without additional cost. Self-contained classrooms can be developed which simply designate one of the existing classrooms in a grade level as the gifted classroom – no additional teachers are needed. Cluster grouping, curriculum compacting – these provisions do not cost anything, but do require the teacher to be knowledgeable about these

strategies. Suggest that the teacher use Shared Information Services or the Education Service Center to obtain “how-to” materials on meeting gifted students’ needs in the regular classroom. Suggest, in addition, that the school corporation actually needs a program instead of individual provisions.

6. Consider other options.
  - a. Homeschooling or partial homeschooling
  - b. Private school or pay tuition at another public school
  - c. Distance learning
  - d. Move

#### **Summary - Key ideas**

- Your child’s education is your responsibility.
- Know your child’s needs.
- Educate yourself.
- Assess your local school’s program.
- Get involved.
- Advocate for your child’s needs now and for overall program improvements.

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Bonita Warrum is the parent of gifted children and Co-founder of the Howard County Alliance for Gifted Education (AGE).

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#### **Contacting Your Legislator & Following Indiana Legislation**

To locate your state and national representatives visit [www.vote-smart.org/index.html](http://www.vote-smart.org/index.html)

To identify your district’s reps visit [www.state.in.us/legislative](http://www.state.in.us/legislative)

To see weekly newsletters on legislative issues visit [www.ingrouponline](http://www.ingrouponline).

Indiana Senate switchboard: 317/232-9400 or 800/382-9467

Indiana House switchboard: 317/232-9600; 800/382-9842 and 800/383-9841

Indiana State House, 200 West Washington St., Indianapolis, IN 46204

## **Services for Gifted Learners**

### **Literature Search: Successful Educational Programs and Strategies for High Ability Students**

Prepared by Dr. Sherrill Martinez and Lue Ann Snider

**Planning and Research, Kansas State Department of Education  
September 25, 2000**

#### **EXECUTIVE SUMMARY**

A literature search was conducted on successful educational programs and strategies for high ability students. High ability students are defined as those students who have exceptional abilities and are capable of high performance. High achieving students use their abilities to demonstrate high performance in one or more subject areas. The number of studies related to high achievers and high ability students was meager when compared to the number of studies related to low achievers, but some direction can be gained from them.

1. Not all high ability students are high achievers and not all high achievers are achieving in line with their talents and abilities. School achievement fails to match achievement potential for more than half of the nation's gifted and talented students.
2. High ability students who achieve in line with their potential are more likely to have high self-esteem, increased confidence and motivation, and decreased levels of anxiety.
3. It is sometimes difficult to recognize exceptional talents or abilities due to a student's culture or family circumstances.
4. Family, student, and school characteristics influence the achievement of high ability students, but no characteristic absolutely determines level of achievement. Each student's needs must be considered individually.
5. Negative peer pressure related to being exceptionally bright can keep high ability students from doing their best.
6. College preparatory tracks in high schools, even when enhanced with Advanced Placement courses, do not provide content that is challenging enough to maximize the talents and abilities of the nation's brightest students.
7. Of the theories advanced for why high ability student in the United States fail to reach their potential, the ones that seem to have the most merit are the following:
  - a. The current reform movement with its emphasis on ensuring that all students master a common set of standards provides little or no incentives for assisting high ability students to advance beyond the standards.
  - b. Many educators believe that it is inequitable to provide additional resources to high ability students to enable them to become even more academically advantaged.
  - c. Curriculum in the United States is a mile wide and a half inch deep.
8. In addition to being able to learn more rapidly and understand concepts at a higher level than other students once they attend class, high ability students typically know

- 35 to 50 percent of the curriculum before they even enter the class. In most classrooms, these students have a great deal of "free" time.
9. A differentiated curriculum, ability grouping, moderate grade skipping, and special schools or programs do seem to have positive effects on the achievement of high ability students.
  10. The most common service offered to high ability students is a pull-out program at selected grade levels for a few hours per week. Usually, there is little continuity, attention to individual student talents, or in-depth study of topics in these pull-out programs. Therefore, study results show little or no advantage to participation.
  11. Learning preferences differ among the gifted and talented, depending on the intelligence area. They also differ between the gifted and non-gifted. In general, high ability students prefer independent study, discussion, and lecture to cooperative learning and small-group instruction.
  12. Curriculum experts in the United States are studying the curricula in higher achieving countries and making modification to the U.S. curriculum, based on the studies. Beginning School Mathematics is a promising program, resulting from an Association for Supervision and Curriculum Development (ASCD) study, which many believe could challenge all students. In this program, fewer topics are studied in more depth.
  13. High ability students are often not taught the importance of commitment, hard work, and positive attitude, unless their talents are in music or athletics. It is easier for students to acquire these attributes when they are engaged in stimulating learning activities and are taught to evaluate and adjust their own learning processes/strategies.
  14. Staff who are skilled in instructing high ability students are extremely important to the success of these students, since curriculum adaptations are generally left up to the teachers. Unfortunately, almost two-thirds of current elementary teachers have no training in teaching highly able students.

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Permission to use the preceding excerpt was granted by Dr. Sherrill Martinez. The full text version can be found at <http://www.ksde.org/pre/edprogramsforhighachievers.htm>.



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## **Developing Programs for Students of High Ability**

By Sandra L. Berger

As educators undertake the task of program planning to accommodate the diverse abilities students bring to school, they are faced with a bewildering array of choices. In education for students who are gifted, a variety of theories and models have been developed. Instructional methods and materials of all types are presented with enthusiasm, each claimed to be "ideal" for students of high ability. To make sound decisions, educators need to understand the components of an effective educational program for these students.

### **WHAT CONSTITUTES AN EFFECTIVE PROGRAM?**

A program "is part of the mainstream of education and doesn't rise and fall with public opinions" (Morgan, Tennant, & Gold, 1980, p. 2). It is a comprehensive, sequential system for educating students with identifiable needs (The Association for the Gifted [TAG], 1989); is often designed by a curriculum committee; and is supported by a district or school budget. Like literature and mathematics programs, programs for students with high ability are assumed to be integral parts of a school curriculum. Teaching strategies may change, but the question of whether or not they should be a part of the curriculum is never raised.

A distinction should be made between programs for students who are gifted students and provisions for these students (Tannenbaum, 1983). "Provisions are fragmentary, unarticulated, and temporary activities, which are neither followed-up in any meaningful way nor preceded by any meaningful lead-in activity" (Morgan, Tennant, & Gold, 1980, p. 2). For example, a teacher with vision and energy might recognize that a particular student needs to have his or her curriculum modified and decide to provide special activities. However, unless there is a commitment on the part of the school system to continue meeting the student's needs and to offer similar opportunities to other able students at each grade level, it does not constitute a program. When budgetary cuts have to be made, enrichment provisions become expendable.

### **WHAT ARE THE COMPONENTS OF AN EFFECTIVE PROGRAM?**

An effective program comprises eight major components. These are described in the following paragraphs.

**Needs Assessment.** A program is an integrated curriculum response to the educational needs of a group of students. Therefore, a logical first step is to determine what needs should be met. Need is defined as the discrepancy between the current status and a desired status and indicates a direction in which an individual or school system wants to move. An effective needs assessment enables educators to gather information about the nature and instructional

needs of the students and the resources of the school or school district. Information about community attitudes and teacher skills may also be gathered. Borland (1989) has provided a list of useful questions that might be asked, possible sources of information, and ways to obtain it.

**Definition of Population.** A clear definition of the population serves as the foundation of a program. The definition should be based on information gleaned from the needs assessment and state and local requirements. It should address specific abilities and traits possessed by persons of high ability. In his 1971 Report to Congress, Marland (1972) included a definition that is well known for its diversity and usefulness. Updated in 1981 (P.L. 97-35, the Educational Consolidation and Improvement Act), this definition has provided guidance to many states. Other programs are based on a multidimensional view of intelligence (Gardner, 1983; Sternberg, 1985). However, a local frame of reference gleaned from the needs assessment is equally important.

**Identification Procedures.** The purpose of identification is to locate students whose needs are not being met by the core curriculum, evaluate their educational needs, and provide them with an appropriate program. Identification procedures must be consistent with the definition in local use and should measure diverse abilities.

Identification is generally divided into several phases that might be conceptualized as a pyramid. The base of the pyramid involves the entire student body and is typically called screening. As the process evolves, the population becomes smaller. The apex of the pyramid comprises the students who will participate in a program. A wide variety of instruments and methods are used as the pyramid narrows. Student records and portfolios, parent and teacher referrals and recommendations, anecdotal evidence, student products, group tests, and individual tests are just some of the ways information is gathered throughout the school year. The identification process should be ongoing and articulated with curriculum options.

**Program Goals.** The goals of a program should be written as clear policy statements of what the district will do to respond to the needs of the target population. They should be stated broadly and may refer to desired student outcomes. Outcomes should reflect the assessed needs of the students. Since program goals should be made available to the public, they should be stated in easily understood language. A comprehensive plan might also state program objectives and suggested activities. Borland (1989), Clark (1988), Maker (1982), VanTassel-Baska and colleagues (1988), and other textbook authors have provided examples of justifiable program goals and objectives.

**Program Organization and Format.** Organization and format refer to decisions on how students will be grouped for instruction, where instruction will take place, how often instruction will occur, who will provide instruction, and who will be responsible for the program and the administrative organization. Like other program components, organization and format are derived in part from the needs assessment. The choice of format(s) involves a number of complex decisions regarding effective delivery of educational services and includes fiscal considerations. The central question is, "Which format(s) will best serve the needs of the defined population(s)?" Special magnet schools, pull-out programs, a school within a school, full-time self-contained classes, resource rooms, effective grouping

arrangements based on specific needs, and mainstreaming are just some of the available options (Cox, Daniel, & Boston, 1985; Daniel & Cox, 1988; Eby & Smutny, 1990).

**Staff Selection and Training.** Selection and training of staff are crucial to the success or failure of a program for students of high ability (Renzulli, 1975). But how can an administrator select the people who will ultimately inspire students and others? Researchers have consistently identified effective teachers as those who "are all things to all people." No definitive profile of the ideal teacher for these students has been published to date. However, interest in and eagerness to work with students who are curious and highly able are essential.

As with other program components, staff selection and training should relate to the needs of the target population. If students are transported to a central location, they need a teacher who has had some experience with self-contained classes. Above all, teachers in programs for students who are gifted should have a demonstrated understanding of these students (TAG, 1989). If teacher selection precedes curriculum development, the teacher will have a critical influence on what will be taught. Because good programs for students of high ability often grow, it is useful to have a core staff who can model effective teaching and collaboration for new teachers.

**Curriculum Development.** The most effective curriculum includes substantive scope and sequence and is based on the needs of the target population (TAG, 1983; VanTassel-Baska et al., 1988). School systems that purchase packaged programs should consider whether or not they are sufficiently rigorous, challenging, and coherent. Appropriate curriculum produces well-educated, knowledgeable students who have had to work hard, have mastered a substantial body of knowledge, and can think clearly and critically about this knowledge.

Maker (1982) has explained how to differentiate curriculum for students who are gifted in terms of process, content, and product. Her discussion enables educators to develop appropriate objectives based on the school system's core curriculum. VanTassel-Baska and colleagues (1988) have provided theoretical bases, specific procedures, and practical applications.

**Program Evaluation.** The evaluation component is critical because it allows a school system to reassess student needs and determine the efficiency and effectiveness of its various program components (Callahan, 1983; Callahan & Caldwell, 1986). Evaluation should be both formative (ongoing) and summative (final outcomes). Evaluation enables a school system to make midcourse corrections and answers the question, "Is this program doing what we want it to do?"

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## **Grouping the Gifted: Myths and Realities**

By Karen B. Rogers

Few topics in education have aroused as much passion, both positive and negative, as ability grouping. Jeanie Oakes' book, *Keeping Track* (1985), spurred a national movement to eliminate grouping practices for students of all abilities. With her powerful appeals to emotion, she argued that tracking students had led to a system for maintaining inequity for the poor, the culturally diverse, and the less able in America's schools. One principal, reacting to her message, wrote in *Educational Leadership*,

“The answer to the debate on ability grouping is not to be found in new research. There exists a body of philosophic absolutes that should include this statement: The ability grouping of students for educational opportunities in a democratic society is ethically unacceptable....It should become a moral imperative along with the beliefs that slavery is immoral and that all people are created equal under the law. (Haistings, 1992, p. 14)”

Then too, educational writers such as Paul George and Robert Slavin have tried to argue similarly for the elimination of tracking using a somewhat more reasoned approach. At one point, Slavin stated,

“Because of the anti-egalitarian nature of ability grouping, the burden of proof must be on those who would claim its effectiveness and indispensability....There is much research still to be done to understand the effects of ability grouping...on student achievement, and more important, to study the effects of alternatives to between-class ability grouping. However, we know enough after 70 years of research on the topic to justify moving away from tracking and beginning a search for instructional methods capable of enhancing the achievement of all learners.” (Slavin, 1993, p. 549)

Why, then, when you read how reason and emotion appear to agree on the "bad effects" of grouping, am I continuing to write this article? Perhaps it is because this issue is of such great importance to gifted children. Moreover, what the general education writers are arguing accounts only for the perspectives of the poor and the culturally diverse who are not gifted. Or perhaps it is because these writers have misled this country's current crop of teachers and administrators, leading them to believe the inequity, moral reprehensibility, and anti-achievement arguments about grouping, with little actual research or even scholarly study to back the arguments up.

It all comes down to the myths about ability grouping, often arising out of emotional, political, and economic foundations, and the realities—what the actual studies about grouping have found out about academic, social, and psychological effects. For the remainder of this article, I would like to take you on a tour of the research, both past and present, to see where the realities lie. I will use my comprehensive meta-evaluation of the 14 research syntheses conducted on various forms of grouping published by the National Research Center on the Gifted and Talented in 1991. Added to this will be an update of all the research on grouping conducted since that time (an additional 56 studies).

**Myth 1: Grouping is not a “picture” of the real world.** In our adult lives, particularly in our work and home lives, we must work together in groups almost continuously.

**Reality:** A recent National Public Radio broadcast (1995) studied the work patterns of adults in the Los Angeles area, finding that approximately 35% of these adults were working from home, with infrequent trips to a centralized location for meetings with others. The reporter viewed this as a picture of the decades to come, whether because of messy transportation issues, the efficacy of technological/electronic transmissions, or the economic efficiency of fewer business centers and buildings to maintain. In fact, it is likely that the 21st century will witness much more individual work done without workers coming to a central place to do business. Each will be accountable for his or her own work, which may be added to other workers' tasks. The "group" project by which all sink or swim may be a dying concept.

At no time in this democracy have adults been forced into having their friends chosen for them. We tend to make friends with others who think and act like we do, people with similar occupations and interests (Schunk, 1996). Yes, we must be able to communicate clearly with all echelons of society in order to buy our groceries, shop, have repairs made on our homes, gas up our cars, and make bank transactions, but this skill is not so pervasive nor so difficult to learn to warrant 13 years of cooperative group work in preparation.

**Myth 2: Grouping is elitist, undemocratic, and racist.** Disproportionate numbers of Asians and Whites are found in high ability groups, and other cultures, such as African American and Hispanic are underrepresented. "Politically powerful" parents of gifted children insist on maintaining these power inequities for their children's "protection."

**Reality:** Since 1990 and the inception of the Jacob Javits Act, all federal government funds in gifted education have been focused on finding and educating underserved and underrepresented populations of gifted learners. As a part of the evaluation process, projects funded must enumerate underrepresented students identified and served through the innovative methods undertaken in the grants. In fact, none of these grants has been awarded to any project for which the primary goal was to identify and serve the more "traditional" gifted child.

Furthermore, the majority of projects undertaken involve programs in which gifted children are grouped for instruction. Hence, we can call neither gifted education, in general, nor grouping, in particular, racist. In fact, the survey studies of numbers of ethnic minorities engaged in grouped programs make the assumption that high-ability groups are formed to separate out the "riff raff" and to maintain the status of the "in group" (Oakes, 1985). Emil Haller (1989), among others, however, has found that group placement is a result of a student's specific and current performance, rather than skin color or economic class. His experiments using student case studies have shown this time and time again, since the mid-1980s. Other factors may be leading educators to under-identify deserving children for gifted grouping opportunities, such as lack of awareness of cultural values that contradict the general notions of giftedness, such as task commitment, desire to achieve, and persistence. This would suggest that major professional development is in order, not that grouping be eliminated.

**Myth 3: In schools that use ability grouping, the "good" teachers get the "good" students.** The worst teachers are those responsible for low-ability classes.

**Reality:** The research on effective teachers of the gifted often concludes with a list of personality, experiential, and cognitive characteristics that best match the needs and abilities of gifted students. Often when people outside the field look at this list, they will remark that all students should have teachers like this. But is it true? Look at this list compiled across the work of Clark (1997), Gallagher (1994), and Davis and Rimm (1998) and decide whether these characteristics would be critical to the education of an average child or a child with special needs. Some characteristics, such as training in gifted education, high intellectual ability, expertise in a specific intellectual or talent area, genuine interest and liking for gifted learners may not be so directly relevant to all learners, but the remainder are.

- Extensive training in gifted education
- High degree of intelligence and intellectual honesty
- Expertise in a specific intellectual or talent area
- A genuine interest in and liking of gifted learners
- Recognition of the importance of intellectual development
- Strong belief in individual differences and individualization
- Highly developed teaching skill and knowledge of how to teach
- Self-directed in their own learning, with a love for new, advanced knowledge
- Level-headed and emotionally stable

Heath in 1997 canvassed gifted students to find out what they thought made a good teacher. Their list looks like a shopping list for all students, except for "moving through class materials quickly" and "consistent provision of accurate feedback."

- Patience
- Sense of humor
- Moves quickly through learning material
- Treats each person as an individual
- Doesn't have to be a "sage on the stage" all the time
- Consistently gives "accurate" feedback

What is being said here is that there probably is not a single paradigm for the "good" teacher. What makes the teacher of the gifted "good" or "effective" might be highly damaging to a low-level learner and vice versa.

**Myth 4: When gifted students are grouped for instruction, this removes the role models at-risk students need to succeed and behave.**

**Reality:** What decades of research on role models has told us, especially the work of Albert Bandura (1964) and Dale Schunk (1996), is that individuals are most likely to choose a "role model" among those whom they perceive to be at about their own level but experiencing some sort of success (attention, financial rewards, praise, friendship, etc.). A low-level student will not choose a gifted student as a role model because (a) he or she doesn't want to be like the gifted student or (b) he or she doesn't think it's possible to be like that—too much change would be involved.

“Observing peers performing a task increases students' self-efficacy for learning....Peers who readily master skills may help teach skills to observing students, but may not have much impact on the self-efficacy of those students who experience learning difficulties....For the latter, students with learning difficulties who have mastered the skills may be excellent models.”  
(Schunk, 1996, p. 113)

What happens when students are grouped with others of similar abilities and interests is most often a function of who becomes the role model in each classroom. It is just as likely that a charismatic severe underachiever might become the role model for anti-establishment behavior in a gifted class as a discipline problem might become the role model for anti-establishment behavior in a low-ability group. Again, there are factors other than the act of grouping that affect the learning climate in grouped as well as whole grouped or ungrouped classes.

**Myth 5: Ability grouping is rigid:** once you're in one group level, you can't get out.

**Reality:** There is a reality to this myth for one kind of grouping - tracking, also known as full-time ability grouping. If children are placed in a low or middle track, what chance would they have to acquire all they are supposed to learn in that track and on the side be picking up all they need to learn in order to be successful in the next highest track? It would be close to impossible for children to move up a track. However, lack of focus, underachievement, disciplinary issues, or a developmental plateau could all lead to children moving down a track. Hence, the permanence or rigidity of tracking seems to be a reality.

But as previous research has pointed out, there are many forms of ability grouping that do not seem to be so inflexible. Performance grouping for specific subject instruction, flexible within-class grouping, cluster grouping, cross-grade grouping, and pullout groups all rely on students' current levels of performance and what they already know about what is being taught as the criteria for group placement (Rogers, 1993). Each of these is defensible as a practice, because up-to-date assessment data are used to place children in the groups they "need" to be in for the best focused and appropriately paced and differentiated instruction. For all of these forms of grouping, the gifted have shown substantial academic effects, ranging from approximately one-third of a year's additional achievement to nearly three-fifths of a year's additional growth. For average and lower achieving groups, the academic effects have been smaller but positive. The key with any form of performance grouping, however, is to focus on what is being taught, not on who is being grouped. The studies since 1990 have pointed consistently to the following conclusions about performance grouping (Rogers, 1998):

1. Advanced students benefit academically more than low-ability students (e.g., Berge, 1990; Gamoran, Nystrand, Berends, & LePore, 1995; Goldring, 1990; Hooper, 1992; Richardson & Fergus, 1993).
2. Homogeneous groups are more beneficial academically for all abilities than heterogeneous grouping (Cohen & Lotan, 1995; Hacker & Rowe, 1993; Lou, Abrami, Spence, & Poulsen, 1996; Slate, Jones & Dawson, 1993).



3. Continuous progress alone (i.e., cross grading, mastery learning) makes no academic difference unless it is combined with a variety of instructional approaches (Hall & Cunningham, 1992; Veenman, 1995).
4. Small-group learning is academically more advantageous than whole-group learning (Hallinan, 1994; Jones & Carter, 1994). One study found this not to be true in teaching basic math facts: whole group drill and practice was found superior for retention (Mason & Good, 1993).
5. What is done when students are grouped (i.e., instructional quality, curriculum coverage, instructional time, class size) is more directly related to achievement than just being placed in a group (Kulik, 1992; Pallas, Entwisle, Alexander, & Stluka, 1994).
6. Low-ability students benefit academically when paired with a high-ability student but the converse is not true (Carter & Jones, 1994; Hooper, 1992).
7. Both high- and low-ability students benefit from more social interactions when grouped within a class with like-ability peers (Berge, 1990; Chauvet & Blatchford, 1993; Hacker & Rowe, 1993).

**Myth 6: Low-ability students' self-esteem is irreparably damaged** when they are placed with other low-ability students.

**Reality:** This myth was roundly rejected in Kulik & Kulik's multiple meta-analyses of the 1980s and early 1990s. In each synthesis they found that performance on paper and pencil measures of self-esteem was somewhat more positive for low-ability students in grouped classrooms, with a similar pattern also found for average-ability students. The explanations, although not documented at the time, were that these students were less likely to be intimidated by those who answered the teacher's questions more rapidly and were more likely to experience success when the instruction had been tailored to their needed pace and level of complexity. Self-confidence, an aspect of self-esteem, has been studied in the decade since the Kuliks' work. Both the research teams of Carter and Jones (1994) and Fuligni, Eccles, and Barber (1995) have found that low-ability students tend to acquire more self-confidence in their abilities when in mixed-ability groups. This leaves us with a dilemma: their self-esteem is not damaged when grouped but their self-confidence improves when they are not grouped. Unfortunately, self-esteem is less high (but perhaps more realistic) for high-ability students when they are grouped but their self-confidence only improves when they are given challenges slightly beyond what they think they can do and then they succeed (Hoekrnan, 1998). This is not likely to happen when gifted students are placed in a mixed-ability group without the challenge and appropriate pacing they require.

**Myth 7: Low-ability and average-ability students' achievement is limited by the groups into which they are placed.**

**Reality:** As pointed out earlier, Slavin's (1993) best evidence synthesis of the research on regrouping by performance level for specific instruction found slight positive gains for low- and average-ability groups when the curriculum itself was appropriately differentiated for these groups. The effects were zero when differentiation could not be documented. Thus, this myth could be true if instruction is not monitored, but it would be wrong to believe that the grouping itself limits achievement. As the more recent research has shown, smaller groups

are superior to bigger groups for overall achievement (Cohen & Lotan, 1995; Loue et al., 1996), and homogeneous groups are superior to heterogeneous groups for overall achievement, class participation, and pro-academic behavior (Hacker & Rowe, 1993; Hooper, 1992).

The goal of schools must be to develop the potential of all students as far as possible. We must never choose an instructional management or delivery strategy that limits any child's potential. It is clear, however, that the act of grouping itself is not limiting. Care must be taken when like-ability grouping is used that the curriculum and the instructional delivery practices are appropriate to the group and aimed slightly beyond what students at that performance level think they are capable of—in Vygotsky's "Zone of Proximal Development"—if we are to make the most of the potential in any group.

**Myth 8: Too much time is spent on discipline and behavior modification in low-ability groups.**

**Reality:** The argument here is that low-ability groups become behavioral landmines and that teachers must be disciplinarians first and teachers last. Most interestingly, Jeanie Oakes' study did not find significant differences in the amount of instructional time expended when low and high tracks in junior and senior high schools were compared (1985), but the expectations for homework time expenditures were significantly different (42 minutes on average for high tracks vs. 14 minutes for low tracks). Is the myth, then, more an issue of teacher expectations than a grouping issue? Do teachers generally assume that low-achieving students are more likely to misbehave and act out and likewise assume that higher achieving students will not? Perhaps the type of disciplinary or behavioral issue differs in differing grouping levels, but the time spent on discipline and behavior modification is not discrepant. More recently, Chauvet and Blatchford (1995) have found that subjects placed in random mixed-ability groups performed significantly less well than those in either friendship groups or like-ability groups.

**Myth 9: Without brighter students in a class, the quality of discussion and pro-academic norms go way down.**

**Reality:** The "quality" of a discussion is a perception of the teacher, who may enjoy having a higher level of thinking going on for personal pleasure. Such discussion, however, may be very intimidating and alienating to lower level students in the class whose pace of learning is considerably slower (Start, 1995) and whose capacity for using higher order thinking may be more limited and infrequent (Nasca, 1980). This brings us to the issue of what purpose gifted students serve in the school system. Are they there to raise the average of the school on measures of school performance and mastery? Are they there to teach those who are struggling with the regular curriculum and its mastery? Are they there to make the teacher's job easier or more pleasurable?

When we think clearly about this, gifted students are there to learn, not to be exploited for the benefit of others. This means that these students' curriculum needs to be compacted in recognition of what they have already mastered, and they need exposure to advanced knowledge and skills at a considerably faster pace and with less review and practice than

provided for students of other ability levels. With this new knowledge and skill, they need to apply and produce at higher levels of complexity and abstraction than other students. Compacting could certainly take place in a heterogeneous setting, but the difficulties of appropriate pacing and variable frequency of complex, abstract applications make the heterogeneous setting an impractical placement for most gifted students if their potential is to be fully developed.

### **The New Realities**

Most of the research that has taken place since my foundational paper in 1991 has come to the same conclusions we have seen in this discussion of myths and realities, but three new patterns of research on grouping are emerging and it will be interesting to see what they add to our understanding of the merits of grouping for all ability levels.

#### **Pattern 1. Mixed-ability groups have "mixed " results.**

Dyads of low- and high-ability students are now being studied rather than small groups. Thus far, the researchers who have looked at this in the six studies I have found conclude that the low-ability students speak out more, behave more appropriately, and stay on task more but with no differences in overall individual achievement. The high-ability dyad members gain little from the interaction (e.g., Cohen & Lotan, 1995; Jones & Carter, 1994). Hence if our goal is to socialize low-ability students, dyads work. If our goal is to improve their academic achievement, dyads are not the answer. For neither goal are dyads appropriate for high-ability students.

#### **Pattern 2: Like-ability groups produce higher academic effects for gifted learners than mixed-ability groups.**

A variety of studies since 1991 have come to this conclusion, from comprehensive syntheses of research (e.g., Goldring, 1992; Lou et al., 1996; Rogers, 1998). There just doesn't seem to be any way around the fact that gifted learners do better in every respect when they are placed together with others who are performing at their levels and share their interests and abilities. At the same time, the achievement effects for other ability levels are not so dramatic or definitive (Richardson & Fergus, 1993). Alternatives to like-ability groups have not produced earthshaking results and more research and experimentation needs to take place to find the best alternatives for these students (students of ability levels other than gifted). At some point, however, educators will have to weigh effort against outcome. Grouping lessens a teacher's efforts to help students master what they have not accomplished by homogenizing pacing and complexity needs. Hence, it is a fairly easy means for developing the potential of gifted learners. The academic gains are substantial and documented. What we want, however, are substantial effects for all students. This means time-intensive individualization/tutoring/mentoring efforts will be required for these other levels of ability. What should not happen, however, is to eliminate performance grouping for gifted students when it does get us where we need to be with academic outcomes.

#### **Pattern 3: Smaller groupings for instruction produce higher academic effects for all students than whole-class instruction.**

Only one study in recent years has suggested benefits for whole-class instruction: when it is used for drill and repetition of low-level convergent skills, such as math computation. The direct instruction research of the late 1970s reached similar conclusions. The question, then,

is how much of what we aim to teach students in schools today is low level and convergent? If one looks at standards from state to state, the aim has consistently been to move toward higher order learning, patterns, and concepts rather than details and facts.

Many educators have used time as the explanatory factor among differing performance levels for students: some students need more time to learn than others. If this is so, then students will need to be placed in smaller groupings according to the amount of time they need to master the standards. And with standards becoming more and more high end, the need for adequate time to master them becomes more and more critical. We can't expect the majority of students to sit around while the slowest ones begin to master what all can learn. This would fly in the face of full potential development for all. More experimentation must take place with what the composition of these small groupings should look like. Will these be friendship groups rather than like-ability groups? Are friendship groups the same thing as like-ability groups (do we choose others to be our friends based on the similarity of their abilities and interests to ours)? Do dyads prove to be more academically effective than groups of three or four? Do single-gender groups change the complexion of achievement in some subjects, such as math and science?

Our work on the grouping issue and how it impacts gifted children is far from done. We have a strong research base for our current practices, but we also have some responsibility for contributing to an understanding of grouping practices' effects on the achievement of all students, regardless of ethnic origin, socioeconomic class, ability, motivation, and performance levels. Perhaps there are even more effective ways to manage the instruction of gifted learners. Let's be on the cutting edge in finding those ways.

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## Options for Acceleration

Many factors enter into deciding the best method of acceleration, or whether to accelerate at all. Students and parents must work together to consider the student's ability levels in all subject areas, social and emotional readiness, and willingness to accelerate.

**Early entrance to kindergarten:** The student is admitted to school prior to the age customarily specified by the district for entry into 1<sup>st</sup> grade.

**Grade skipping:** The student moves ahead of normal grade placement. This may be done during an academic year (e.g., a 3<sup>rd</sup> grader goes directly into 4<sup>th</sup> grade; skips the last two yrs. of high school to enter college), or at year end (e.g., a 3<sup>rd</sup> grader is promoted to 5<sup>th</sup> grade).

**Continuous progress:** The student is given material deemed appropriate for current achievement as the student becomes ready.

**Self-paced instruction:** The student is presented with materials that allow him or her to proceed at a self-selected pace.

**Subject-matter acceleration:** Without being assigned to a higher grade, the student is placed for part of the day with students at more advanced grade levels for one or more subjects (e.g., a 5<sup>th</sup> grader goes to 6<sup>th</sup> grade for science instruction).

**Combined classes:** The student is placed in classes where two or more grade levels are combined (e.g., 3<sup>rd</sup> and 4<sup>th</sup> graders split rooms). The arrangement can be used to allow younger children to interact with older ones, academically and socially.

**Curriculum compacting:** The student is given reduced amounts of introductory activities, drill, and review. The time saved may be used to move more quickly through the curriculum.

**Telescoping curriculum:** The student spends less time than usual in a course of study (e.g., completes a one yr. course in one semester or finishes jr. high in two yrs. rather than three).

**Mentorships:** The student is exposed to a mentor who provides advanced training, experiences, and pacing in a content area.

**Extracurricular programs:** The student is enrolled in course work or summer programs that confer advanced instruction and or credit for study (e.g., fast-paced language or math courses offered by universities).

**Concurrent enrollment:** The student takes a course at one level and receives credit for successful completion of a parallel course at a higher level (e.g., takes algebra when in junior high and receives credit for high school algebra and junior high math, or takes a college physics course in lieu of high school physics).

**Early graduation:** The student graduates from high school or college in 3 1/2 years or less.

**Advanced placement:** The student takes a course in high school in preparation for an examination that may confer college credit for satisfactory performance.

**Credit by examination:** The student receives credit (at high school or college level) upon successful completion of an examination.

**Correspondence courses:** The student takes high school or college courses by mail, video, or audio course presentation.

**Early entrance into junior high, high school, or college:** The student is admitted with full standing to an advanced level of instruction at least one year early.

**Acceleration in college:** The student completes two or more majors in a total of four yrs. and/or earns a master's degree along with the bachelor's.

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This excerpt, used with permission, is from SET Precollege Newsletter, Nov/Dec 1997.

## **Differentiation, Research, Evidence, and Implications for Practice**

By Paula Olszewski-Kubilius, Ph.D.

Director, Center for Talent Development Northwestern University

We struggle mightily in our field with a disconnect between research and practice. What we are doing for gifted children in schools and programs is often at odds with what the research says works or works best for students. What does the research say about differentiation? There are bodies of research that do speak to differentiation that are not typically thought of as doing so. I would like to bring these to your attention today. One of these bodies of research is the research on grouping. We have very good research on the efficacy of homogeneous grouping to serve gifted students. Karen Rogers and Kulik and Kulik have done meta-analyses which compiled literally hundreds of studies on this issue. These studies suggest two things: that gifted students learn more when they are in learning environments with other gifted students for at least part of the day and receive advanced material (up to one year more of growth reported on standardized test, and their self-esteem does not suffer any permanent ill effects, albeit some temporary ones).

Grouping is controversial, which is unfortunate, because it is not grouping per se that is advantageous to gifted students as much as it is the advanced or differentiated content that students receive once they are grouped. Gifted students who learn more when grouped together do so because of changes in the curriculum. That is the element of this practice that has the most impact. We have ample studies that show putting kids together physically in the same space does little unless something significantly different than is typical is going on instructionally.

Karen Rogers summarized the results of grouping research: "It is probable that the substantial gains in achievement reported for gifted and talented students in 6 of the 8 research syntheses are produced by the interaction of richer and more complex content, greater degrees of learning potential, teachers who are interested in their students and in their subject, and the willingness of gifted students to learn while in a classroom with other interested, high ability learners" (Rogers, 1993, p. 589).

The most essential element of these is the advanced curriculum. Grouping is often pitted against differentiation within the heterogeneous classroom as if they were practices that are at the opposite ends of a spectrum. This is a mistake because any kind of differentiation often involves some minimal level of cluster grouping, and the success of grouping is necessarily and almost exclusively dependent upon the differentiation of the curriculum. They really go hand in hand.

What educators need to focus on is what happens in any kind of administrative arrangement we create to serve gifted children (pull outs, full time grouping, etc.). We worry too much about the wrong things, i.e., about the arrangements surrounding the delivery of differentiated content such as where and how students meet, how often they meet, and how many of them there are, when the essential element that makes the biggest difference is the differentiation of the curriculum.



Grouping research in our field supports the practice of differentiation. It speaks to this issue very clearly, and as we make our arguments within our districts to support differentiation, this body of research can be one of our weapons.

We have in this field another solid base of research about the efficacy of the talent search model for identification of students. This research suggests that domain specific tests, such as the SATM and the SATV, or the ACTR and the ACTM, identify mathematical and verbal talent well and are valid measures when used off-level with gifted students. Talent search has made the practice of off-level testing commonplace in our field.

These tests tell us how far beyond the in-grade curriculum a child is functioning and thus, are good measures to make decisions about the use of different kinds of educational options with individual students, particularly accelerative options. SAT and ACT test enable us to identify ranges or levels of giftedness within specific domains of talent.

For those of you unfamiliar with talent search, performance on in-grade achievement tests tells us what students know about the in-grade curriculum which is usually a lot. However, what they do not tell us is what students know beyond that-- which is essential in order to serve them with the correct placement and provide a challenging level of instruction.

Research studies show that SAT and ACT scores are related to performance in matching domains in high school and in college, and are correlated and predictive of students' course and career selections. For example, high performance on SAT-M predicts whether a student will take mathematics courses in high school and college and whether he or she will choose a career related to mathematics. These findings are impressive and significant for our field because they indicate that the SAT and ACT have very impressive long term predictive validity, unlike IQ tests, creativity tests, tests of divergent thinking, or any other kinds of identification measures we currently use, which have quite limited long term predictive validity.

The talent search programs have given us a great deal of research also on the efficacy of fast paced instruction, another form of differentiation, that involves speeding up the rate of instruction either by eliminating already mastered material, drill and repetition, or by focusing on major topics or concepts, for gifted learners. This research shows that students whose intellectual abilities are advanced by 2 to 4 years need one half to one fourth the time to complete high school courses than is currently the model today. In other words they can spend as little as half a year to complete a high school course.

Joyce VanTassel-Baska, a curriculum expert within our field, commented in a recent interview to be published in the Journal for the Education of the Gifted, that the talent search model is the best identification education model we have in the field, best substantiated by hard core research. Yet this is a program that is largely viewed as outside of school and not affecting school practice. In fact, participation in the Midwest Talent Search has declined in Indiana since 1992 by several thousand students, a fact noted in a recent report by the Indiana Association for the Gifted.

I would encourage all Indiana educators to look into talent search as an option for your students. The advantage of talent search is that it is a program that serves the student, the family, and the educator. The students and parents get connected to a network of support that involves access to information about educational programs across the country designed specifically for gifted kids. Educators and parents get better information about the abilities of students, information that can help them make decisions about whether students need profound changes in their school program because of very exceptional abilities or more moderate changes. The talent search gives parents and educators information that can help them decide the degree of differentiation or accommodation a particular gifted student needs because differentiation needs to occur at many levels, for gifted students as compared to non gifted students, and also for different varieties of gifted students.

Research has shown us that one of the keys to successful differentiation of curriculum for gifted children is the initial training of teachers and ongoing support for teachers. A recent research (Archambault et al, 1993) study showed that third and fourth grade teachers, without training, do not differentiate within their classroom for gifted children. Specifically, gifted children were no more likely to be the recipients of such strategies of accommodation as adjusting homework or assignments, pre-testing to eliminate already learned material, using learning centers, being placed for instruction at a higher grade level, etc. than non gifted students. Within-class clustering of students occurred, but not differentiated instruction. This was true even though the teachers involved in the study were very experienced, i.e. the average years in the teaching profession per teacher was over 10 years.

However, 61% of the teachers had no formal training in gifted education suggesting that the problem was primarily a training issue. Other recent research comparing different types of programs obtained similar findings about in-class programming arrangements for gifted students. Marcy Delcourt, et al (1994), author of one of these studies, commented that we must beware so that in-class programs for gifted students do not disintegrate into a "no program model."

A recent study done by Sally Reis and her associates (1993) showed that teachers will differentiate if given support to do so. Specifically, Reis trained teachers to do curriculum compacting. Curriculum compacting is a very effective way to eliminate already mastered material via pre-testing or some form of assessment. This study found that for the typical gifted student, up to 50% of the in-grade curriculum in math, science or social studies could be eliminated because the students already knew it (due to dumbing down of textbooks and to outside of school learning). Students who received curriculum compacting were compared to gifted students who did not. The students who were compacted did better on off-level achievement tests than those who did not have the compacting. There was no loss of learning due to compacting even when a very stringent assessment of learning was used.

Also important is that Reis provided three different levels of training and support to teachers -minimal level was a book on compacting, in the middle was a book and video, and the maximum level of support was a book, video and a teacher-mentor. Of course, teachers who had more support were more likely to do the compacting, but they were also more likely to use the time gained from compacting well-that is, to provide appropriate enrichment or accelerated content to students rather than having students check papers or tutor other

students. It is interesting to analyze the different levels of training provided in this study. The first two were relatively passive--viewing a video or reading a book. The third was very active--the teacher mentor was in the classroom helping the teacher to find supplemental materials to use.

We have firm support in our field for differentiation and I think we have research about a variety of forms of differentiation, fast-paced instruction, grouping with enrichment or acceleration, differentiation within the heterogeneous classroom, that can support our efforts.

I recently read an article by Jim Delisle on differentiation in *Gifted Child Today*. The title of the brief article was "The Limits of Differentiation." The point Jim is trying to make is that it seems that the field of general education has picked up on this term differentiation--it is being touted by the Association for Supervision and Curriculum Development as appropriate for every child. Delisle comments that this is a result of the age-old assumption that what is good for the gifted is good for all students. He further comments that in thinking about curriculum differentiation, which is highly desirable for gifted students, we need to realize that this is really only a good beginning. Delisle emphasizes that we are dealing with gifted individuals who need differentiated content but also attention to their very different social and emotional makeup, and that this must not get lost in the discussion of differentiation. In other words, differentiation as a concept applies to curricular areas but also to affective needs and development.

The last issue I want to raise is the role of the gifted coordinator--and this also speaks to the issue of differentiation. I worry a lot about whether the role of the gifted coordinator will survive in schools or districts. It seems that often these positions are readily cut or reduced. I think the role of the building or district level coordinator must change in response to changes in our thinking about how we infuse gifted education into schools. More and more, in addition to specific programs for students, we desire that all teachers know how to accommodate gifted children in their classes. All classroom teachers should have a minimal understanding of giftedness, its characteristics, etc., so that they are tuned into finding giftedness in children and responding to it.

We realize that not all gifted children are served by a one-size-fits-all program, and we recognize the diversity of abilities and levels of ability among kids. We also know that most gifted programs involve only two to four hours of time a week, and so the majority of a child's time, for most children, is spent in the regular classroom.

Too often the gifted coordinator is bogged down with running specific programs for kids and has little time to provide assistance to individual teachers who struggle to serve gifted children in their classrooms--to help them find content for these children, to help them pretest children, etc. I think in the future, this may be a major new role for the gifted coordinator--that of teacher educator and teacher trainer or the coordinator of differentiation. This is the way to insure that more gifted children are served appropriately more of the time.

Another broadened role for the gifted coordinator is to connect the school to the community and its learning resources--to utilize community programs such as museums and other cultural institutions in the service of learning. This broadened role will make us more

valuable to schools and general education and protect gifted program budgets from scrutiny and cuts. We must make ourselves essential to education because of our knowledge on how to provide for individual differences in children-we are the experts on individual differences.

A word to frame our efforts is "challenge." Our goal, simply put, is to challenge all children within our schools and to use whatever means available to us or possible to do so. Another key word is "match." Our efforts are to match children to appropriate educational activities and resources. We struggle with the words gifted and talented. We need to emphasize that our business is about providing challenge and the best match between an individual child's ability and his or her educational program to accommodate individual differences that exist. We need to remake ourselves into "challenge" and "match" and differentiation experts. I urge you as educators to do two things.

- use the research to guide your differentiation efforts, and
- find ways to make yourself invaluable to your school by broadening your role and becoming the expert on how to accommodate individual learning differences in children.

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## **Critical Questions About Tiered Lessons**

By Cheryll Adams, Ph.D.

### **What is a tiered lesson?**

Many of us have heard the term, "tiered lesson," as the differentiation movement has taken center stage as a means of meeting the needs of all students in the classroom. A tiered lesson is a differentiation strategy that addresses a particular standard, key concept, and generalization, but allows several pathways for students to arrive at an understanding of these components, based on the students' interests, readiness, or learning profiles.

### **If I teach a tiered lesson, am I meeting the needs of gifted students?**

It depends. When the tiered lesson addresses the student's readiness to interact with a particular topic/skill/idea, there is a good chance that the needs of the gifted students will be met. A lesson tiered by readiness level implies that the teacher has a good understanding of the students' ability levels with respect to the lesson and has designed the tiers to meet those needs. You might think of a wedding cake with tiers of varying sizes. Many examples of lessons tiered in readiness have three tiers below grade level, at grade level, and above grade level. There is no rule that states there may only be three tiers, however. The number of tiers will depend on the range of ability level in your classroom. Remember: You are forming tiers based on your assessment of your students' abilities to handle the material particular to this lesson. Students are re-grouped the next time you use tiering as a strategy.

When the lesson is tiered by interest or learning profile, we are looking at student characteristics other than ability level. Students will be in interest or learning style groups and the ability level will be varied. In these instances, we are not making any modifications to address the specific intellectual needs of gifted students, but are giving all students choices of content, process, or product that are at about the same ability level. These tiers are similar to those in a layer cake--all the same size.

### **Will my groups be the same size?**

Not necessarily. The number of groups per tier will vary as will the number of students per tier. We are not looking to form groups of equal size: we are trying to form groups based on the readiness needs of individual students. For example, Tier One may have two groups of three students, Tier Two five groups of four students, and Tier Three may have one group of two students. When the lesson is tiered by interest or learning profile the same guidelines apply for forming these groups--different tiers may have varying numbers of students.

### **If I teach only the gifted students, does that mean I won't tier lessons?**

No. The gifted are a heterogeneous group even when in a pull-out or self-contained class. You will still need to address the varied ability levels in this population.

### **Is there anything I need to have done before I try a tiered lesson with my class?**

Yes. You must have a clearly articulated classroom management plan that provides the structure for the class when students work in groups. In addition, you must have anchoring activities for students who finish early or are waiting for you to assist their group. Both of

these are non-negotiables. It makes sense to alert your administration and the parents that you will be trying some new strategies in the classroom in case there are questions.

### **Are there specific parts to a tiered lesson?**

Definitely! To take a closer look at the anatomy of a tiered lesson, I'll use the one reproduced here. It was developed by Dr. Rebecca Pierce, Associate Professor of Mathematical Sciences at Ball State University, in conjunction with her work on the Javits Grant, Project GATE.

First, identify the grade level and subject for which you will write the lesson. In this case, the grade level is second and the subject is mathematics.

Second, identify the standard (national, state, district, etc.) that you are targeting. A common mistake for those just beginning to tier is to develop three great activities and then try to force-fit them into a tiered lesson. Start with the standard first. If you don't know where you are going, how will you know if you get there? Dr. Pierce has selected Standard 7, Fractions. She has used the standards for mathematics delineated by the Indianapolis Public Schools. If you use the new Indiana Academic Standards for Mathematics (IASM), this would be Standard 1, Number Sense.

Third, identify the key concept and generalization. The key concept follows from the standard. Ask yourself, "What Big Idea am I targeting?" In this example, it is an understanding of fractions. The generalization follows from the concept. Ask, "What do I want the students to know at the end of the lesson, regardless of their placement in the tiers?" In this lesson, all students will come away knowing that fractions represent parts of a whole.

Fourth, be sure students have the background necessary to be successful in the lesson. What scaffolding is necessary? What must you have already covered? Are there other skills that must be taught first?

Fifth, determine in which area you will tier. You may choose to tier the content (what you want the students to learn), the process (the way students make sense out of the content), or the product (the outcome at the end of a lesson, lesson set, or unit--often a project). When beginning to tier, I would suggest that you only tier one of these three. Once you are comfortable with tiering, you might try to tier more than one area in the same lesson.

Sixth, determine the type of tiering you will do: readiness, interest, or learning profile. Readiness is based on the ability levels of the students. Interest is based on their interest in a topic, generally gauged through an interest survey. Learning profile may be determined through various learning style inventories. Gardner's Multiple Intelligences as a learning style system is currently quite popular.

Seventh, based on your choices above, determine how many tiers you will need and develop the lesson. Remember, when meeting the academic needs of gifted students, you will want to choose to tier according to readiness. You may have three tiers: below grade level, at grade level, and above grade level. If you choose to tier in interest or learning profile, you may control the number of tiers by limiting choices or using only a few different learning styles.

Tiering on all eight of Gardner's Multiple Intelligences in one lesson may not be a good place to start!

Differentiation means doing something different--qualitatively different. Make sure you keep this in mind when tiering the lessons. Secondly, be sure each tier is doing moderately challenging, respectful work. We don't want one group doing blackline practice sheets and another doing Japanese cooking!

Notice in Dr. Pierce's lesson that she has three tiers working on fractions. Each has paper shapes to divide. However, as you read the activities for each tier, beginning in Tier I and moving through Tier III, the activities differ from concrete to abstract, and from simple to complex, to use Carol Tomlinson's Equalizer word pairs. Tier I is the lowest level; Tier III is the highest level.

Last, develop the assessment component to the lesson. The assessment can be formative, summative, or a combination of both. You may use some means of recording your observations of the various groups, such as flip cards or sticky notes. You may have developed a rubric for each tier based on the particular product that is developed. You may give a formal paper-and-pencil test. You will choose your assessment based on your needs and your lesson design. In this lesson, Dr. Pierce is observing the students as they work and jotting down notes for a formative assessment of each student

#### **Where can I find more information on tiered lessons?**

For more information on tiering, please contact the Center for Gifted Studies and Talent Development at 1-800-842-4251. To give you some more examples to study, I have included a tiered lesson that I developed, and one from Starlynn Atkins, a teacher of the gifted in the Charles A. Beard Memorial System. Starlynn is working on her endorsement in gifted education through Ball State.

Two websites that provide good examples of tiered lessons are the Center for Gifted Studies and Talent Development at Ball State as part of the Javits Project, and the Indiana Department of Education Gifted and Talented Unit's Tiered Lesson Project, developed by Dr. Cheryll Adams, Dr. Felicia Dixon, and Dr. Rebecca Pierce and funded by the IDOE. For the BSU site, go to [www.bsu.edu/teachers/services/ctr/javits](http://www.bsu.edu/teachers/services/ctr/javits) and click on Instruction on the white gate. For the IDOE site, go to [www.doe.state.in.us/gt/tiered-curriculum](http://www.doe.state.in.us/gt/tiered-curriculum).

#### **Lesson by Dr. Rebecca Pierce**

Subject: Mathematics

Grade: Second

Standard: #7 Fractions

Key Concept: Students develop an understanding of fractions.

Generalization: Illustrate how fractions represent part of a whole

Background: Fractions (halves/ thirds) have been introduced and illustrated by the students with pictures.

Tiered in content according to readiness

**Tier I:**

Using paper circles (pizza) & squares (sandwich), in pairs students determine how to share the food equally and illustrate by folding the paper. Have two pairs determine how they can share equally with four people. They can cut the parts and stack them to see if they match. Have the quad repeat the process for sharing a Reese's Peanut Butter Cup equally with three people.

**Tier II:**

Using paper circles (pizza) & squares (sandwich), in triads have students determine how to share the food equally and illustrate by folding the paper. Have two triads determine how they can share equally with six people. Have the group of six repeat the process for sharing a Birthday Cake with twelve people. In each case, they can cut the parts & stack to match. Have the group start with half a cake and divide equally for 3, 6, & 12 people.

**Tier III:**

Using paper rectangles (sandwiches) & triangles (slices of pie), in pairs have students determine how to share the food in three different ways to get equal parts. Have them illustrate by folding the paper. Are there other different ways to divide each shape equally? How many ways are there? Have the pair determine which shapes - circles, squares, rectangles, triangles - are easier to divide evenly and illustrate why with a particular food of their choice.



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## **Cluster Grouping of Gifted Students: How To Provide Full-Time Services on a Part-Time Budget**

By Susan Weinbrenner and Barbara Devlin

### **WHAT DOES IT MEAN TO PLACE GIFTED STUDENTS IN CLUSTER GROUPS?**

A group of five to eight identified gifted students, usually those in the top 5% of ability in the grade level population, are "clustered" in the classroom of one teacher who has training in how to teach exceptionally capable students. The other students in that class are of mixed ability. If there are more than eight to ten gifted students, two or more clusters should be formed.

### **ISN'T CLUSTER GROUPING THE SAME AS TRACKING?**

No. In a tracking system, all students are grouped by ability for much of the school day, and students tend to remain in the same track throughout their school experience. Gifted students benefit from learning together, and need to be placed with similar students in their areas of strength (Hoover, et al., 1993; Kulik & Kulik, 1990; Rogers, 1993). Cluster grouping of gifted students allows them to learn together, while avoiding permanent grouping arrangements for students of other ability levels.

### **WHY SHOULD GIFTED STUDENTS BE PLACED IN A CLUSTER GROUP INSTEAD OF BEING ASSIGNED EVENLY TO ALL CLASSES?**

When teachers try to meet the diverse learning needs of all students, it becomes extremely difficult to provide adequately for everyone. Often, the highest ability students are expected to "make it on their own." When a teacher has several gifted students, taking the time to make appropriate provisions for them seems more realistic. Furthermore, gifted students can better understand and accept their learning differences if there are others just like them in the class. Finally, scheduling out-of-class activities is easier when the resource teacher has only one cluster teacher's schedule to work with.

### **WHAT ARE THE LEARNING NEEDS OF GIFTED STUDENTS?**

Since these students have previously mastered many of the concepts they are expected to "learn" in a given class, a huge part of their school time may be wasted. They need exactly what all other students need: consistent opportunity to learn new material and to develop the behaviors that allow them to cope with the challenge and struggle of new learning. It is very difficult for such students to have those needs met in heterogeneous classes.

### **ISN'T GIFTED EDUCATION ELITIST?**

Gifted students need consistent opportunities to learn at their challenge level--just as all students do. It is inequitable to prevent gifted students from being challenged by trying to apply one level of difficulty for all students in mixed-ability classes. When teachers can

provide opportunities for all students, including those who are gifted, to be challenged by rigorous curriculum, there is nothing elitist about the situation.

**DON'T WE NEED GIFTED STUDENTS IN ALL CLASSES SO THEY CAN HELP OTHERS LEARN THROUGH COOPERATIVE LEARNING, PEER TUTORING, AND OTHER COLLABORATIVE MODELS?**

When gifted students are placed in mixed-ability groups for cooperative learning, they frequently become tutors. Other students in these groups may rely on the gifted to do most of the work and may actually learn less than when the gifted students are not in their groups. When gifted students work in their own cooperative learning groups from time to time on appropriately challenging tasks, they are more likely to develop positive attitudes about cooperative learning. At the same time, other students learn to become more active learners because they are not able to rely so heavily on the gifted students. When the learning task focuses on content some students already know, those students should be learning how to cooperate in their own groups on extension tasks that are difficult enough to require cooperation. When the cooperative task is open-ended and requires critical or divergent thinking, it is acceptable to include the gifted students in heterogeneous cooperative learning groups.

**IF GIFTED STUDENTS ARE NOT PLACED IN SOME CLASSES, WON'T THOSE CLASSES LACK POSITIVE ROLE MODELS FOR ACADEMIC AND SOCIAL LEADERSHIP?**

Research on role modeling (Schunk, 1987) indicates that to be effective, role models cannot be drastically discrepant in ability from those who would be motivated by them. Teachers overwhelmingly report that new leadership "rises to the top" in the non-cluster classes. There are many students, other than identified gifted students, who welcome opportunities to become the new leaders in groups that no longer include the top 5% of a grade level group. This issue becomes a problem only when more than 5 to 10% of students are clustered. As classes are formed, be sure the classes without clusters of gifted students include several highly capable students.

**HOW DOES THE CLUSTER GROUPING CONCEPT FIT IN WITH THE INCLUSION MODELS THAT INTEGRATE STUDENTS WITH EXCEPTIONAL EDUCATIONAL NEEDS INTO REGULAR CLASSES?**

The Inclusion model, in which students with exceptional learning needs are integrated into regular classrooms, is compatible with the concept of cluster grouping of gifted students, since both groups have exceptional educational needs. The practice of cluster grouping allows educators to come much closer to providing better educational services for groups of students with similar exceptional learning needs. In non-cluster classrooms, teachers report they are able to pay more attention to the special learning needs of those for whom learning may be more difficult. Some schools choose to avoid placing students with significant learning difficulties in the same class that has the cluster group of gifted students. A particular class may have a cluster of gifted students and a cluster of special education students as long as more than one adult is sharing the teaching responsibilities.

### **WON'T THE PRESENCE OF THE CLUSTERED GIFTED STUDENTS INHIBIT THE PERFORMANCE OF THE OTHER STUDENTS IN THAT CLASS, HAVING A NEGATIVE EFFECT ON THEIR ACHIEVEMENT?**

When the cluster group is kept to a manageable size, many cluster teachers report that there is general improvement in achievement for the entire class. This suggests the exciting possibility that when teachers learn how to provide what gifted students need, they also learn to offer modified versions of the same opportunities to the entire class, thus raising the level of learning for all students, including those who are gifted. The positive effects of the cluster grouping practice may be shared with all students over several years by rotating the cluster teacher assignment among teachers who have had gifted education training and by rotating the other students so all students eventually have a chance to be in the same class with a cluster group.

### **HOW SHOULD STUDENTS BE IDENTIFIED FOR THE CLUSTER GROUP?**

If there will be one cluster, its highly capable students should be those who have demonstrated that they will need curriculum that exceeds grade level parameters. Traditional measures, such as standardized tests may also be used, but not as the sole criteria. If there will be more than one cluster, those highly capable in specific subjects might be grouped together in separate clusters. Profoundly gifted students should always be grouped together, since there will rarely be more than two such students in any grade level. Identification should be conducted each spring with the help of someone with training in gifted education.

### **WHAT SPECIFIC SKILLS ARE NEEDED BY CLUSTER TEACHERS?**

Since gifted students are as far removed from the "norm" as are students with significant learning difficulties, it is necessary for teachers to have special training in how to teach children of exceptionally high ability. Cluster teachers should know how to:

- recognize and nurture behaviors usually demonstrated by gifted students;
- create conditions in which all students will be stretched to learn;
- allow students to demonstrate and get credit for previous mastery of concepts;
- provide opportunities for faster pacing of new material;
- incorporate students' passionate interests into their independent studies;
- facilitate sophisticated research investigations;
- provide flexible grouping opportunities for the entire class.

### **SHOULD THE CLUSTER GROUPING MODEL REPLACE OUT-OF-CLASS ENRICHMENT PROGRAMS FOR GIFTED STUDENTS?**

No. Cluster grouping provides an effective complement to any gifted education program. Gifted students need time to be together when they can just "be themselves." The resource teacher might also provide assistance to all classroom teachers in their attempts to differentiate the curriculum for students who need it. As a matter of fact, this resource person is being called a "Schoolwide Enrichment Specialist" in many schools instead of a "Gifted Program Coordinator" in recognition of the fact that so many students can benefit from "enriching" learning opportunities.

### **IS CLUSTERING FEASIBLE ONLY IN ELEMENTARY SCHOOLS?**

No. Cluster grouping may be used at all grade levels and in all subject areas. Gifted students may be clustered in one section of any heterogeneous class, especially when there are not enough students to form an advanced section for a particular subject. Cluster grouping is also a welcome option in rural settings, or wherever small numbers of gifted students make appropriate accommodations difficult. Keep in mind, however, if your school has enough gifted students for separate sections in which curriculum is accelerated, such sections should be maintained. Many middle schools have quietly returned to the practice of offering such sections. Placement in cluster groups is gained by demonstrating that one needs a differentiated curriculum--not by proving one is "gifted."

### **HOW ARE RECORDS KEPT OF THE PROGRESS MADE BY STUDENTS IN CLUSTER GROUPS?**

Differentiated Educational Plans (DEP) should be maintained for gifted students and filed with their other ongoing records. In some schools, teachers develop a DEP for the cluster group, rather than for individual students. These plans briefly describe the modifications that are planned for the group and should be shared with parents regularly.

### **WHAT ARE THE ADVANTAGES OF CLUSTER GROUPING?**

Gifted students feel more comfortable when there are other students just like them in the class. They are more likely to choose more challenging tasks when other students will also be eligible. Teachers no longer have to deal with the strain of trying to meet the needs of just one precocious student in a class. The school is able to provide a full-time, cost-effective program for gifted students, since their learning needs are being met every day.

### **WHAT ARE THE DISADVANTAGES OF CLUSTER GROUPING?**

There may be pressure from parents to have their children placed in a cluster classroom, even if they are not in the actual cluster group. Gifted students may move into the district during the school year and not be able to be placed in the cluster classroom. These situations may be handled by:

- providing training for all staff in compacting and differentiation so parents can expect those opportunities in all classes;
- requiring parents to provide written documentation of their child's need for curriculum differentiation instead of requesting the placement by phone;
- rotating the cluster teacher assignment every two years among teachers who have had appropriate training so parents understand that many teachers are capable of teaching gifted students;
- rotating other students into cluster classrooms over several years.

Another disadvantage might arise if the cluster teachers are not expected to consistently compact and differentiate the curriculum. Their supervisor must expect them to maintain the integrity of the program, and must provide the needed support by facilitating regular meetings of cluster teachers, and by providing time for the enrichment specialist to assist the cluster teachers.

## CONCLUSION

There is an alarming trend in many places to eliminate gifted education programs in the mistaken belief that all students are best served in heterogeneous learning environments. Educators have been bombarded with research that makes it appear that there is no benefit to ability grouping for any students. The work of Allan (1991), Feldhusen (1989), Fiedler (1993), Kulik and Kulik (1990), Rogers (1993) and others clearly documents the benefits of keeping gifted students together in their areas of greatest strength for at least part of the school day. It appears that average and below average students have much to gain from heterogeneous grouping, but we must not sacrifice gifted students' needs in our attempts to find the best grouping practices for all students.

If we do not allow cluster groups to be formed, gifted students may find their achievement and learning motivation waning in a relatively short period of time. Parents of gifted students may choose to enroll their children in alternative programs, such as home schooling or charter schools. The practice of cluster grouping represents a mindful way to make sure gifted students continue to receive a quality education at the same time as schools work to improve learning opportunities for all students.

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## **Developing Verbal Talent**

By Michael Clay Thompson

Verbal talent is developed by new verbal experience. It will not develop on its own, and it will not develop if the only experiences a child has are within the child's existing range of verbal experience. More of the same experience will not develop anything. Verbal talent will develop when a child is thrown into verbal situations that he or she can't do, doesn't understand, hasn't seen before—forcing the child to stop, think, listen, pay attention, reread, study, change. When new verbal experience lies beyond the known range, the child must learn new things in order to understand. It is then the child who develops his or her own verbal talent in order to accommodate an encounter with verbal phenomena that are new and challenging.

Only verbal experience that changes a child develops a child.

If this seems too obvious, we must recall that it flies in the mass face of an educational culture that avoids the shock of difficulty in the name of self-esteem; giving students things they can do, the theory is, builds their self-esteem. Developing verbal talent in gifted children doesn't work that way, but provides a model in which self-esteem is the accomplishment the student feels after successfully struggling for intellectual growth. In order to develop verbal talent, we don't give kids things they can do; we give them things they cannot do, yet.

### **1. Classics: Mentors on Paper**

Perhaps the clearest example of what will not develop verbal talent is the age-graded basal reader. Barbara Clark wrote that:

By keeping [gifted] children in the regular basal series, insisting that they adhere to the regular reading program, follow-up, and skill-builder activities, we often frustrate them. This can destroy their belief in school as an interesting, exciting place and in learning and books as the wonderful experiences they thought they were. (Clark, 1988, p. 338)

Reis and Renzulli also noted "widespread dissatisfaction expressed by so many school personnel about the use of basal readers for high ability students" (p. 95) and described basal readers for gifted students as "boring and sterile" (p. 95). VanTassel-Baska wrote that "The use of a basal reading series typically focuses too much time and attention on mastering the reading process, particularly phonics, rather than allowing gifted students the opportunity for holistic reading of good literature" (p. 156).

If gifted students should not be reading age-graded, vocabulary-controlled, dumbed-down basal readers, what should they be reading?

What should they be reading? In addition to a variety of outstanding contemporary literature, and various kinds of non-fiction including history, biography, and books about science, students should be reading classics.

As W. H. Auden wrote: "Some books are undeservedly forgotten; none are undeservedly remembered."

It is true. The classics remain classic. They are at many levels the standards of excellence and the enduring works that must form one strong component in the education of high ability students. By virtue of their multileveled excellence, and through the influence of these forms of excellence on students' minds, the classics stretch, challenge, and mold students, changing their tastes and giving them a sense of what the possibilities are for human expression in language (Thompson, "Mentors," p. 58). In addition to having properties that will develop students' verbal talent, classics are educational in a sense that other books are not. Classics are part of the thoughtful commerce of the world, connecting students' minds to the minds of others in every continent. Through classics, students come to know the lovely and wondrous literature of the world. In the classics, they will hear the song of their species, they will encounter their context, they will discover their kin, and they will discover a shimmering mirror of words in which they can see manifold aspects of themselves.

For purposes of developing verbal talent, it is important to note what that Harry Passow once told me, that classics are *self-differentiating*. A book such as *Treasure Island* can be read by many students, but it contains telescoping levels of depth and complexity. No matter where the reader is in verbal development, the next level of *Treasure Island* is there, waiting, luring the student on to higher forms of language and idea. The fact that one never really gets to the bottom of a great book is of inestimable value, and distinguishes such books from ephemeral literature. It also explains why gifted children are re-readers who go back to books and work their way into a deeper level than they have been before.

Classics are especially appropriate for gifted children because of the recognition factor; they are both the work of gifted writers, and are often about gifted characters. Gifted children will find classic characters who are like themselves, who think as they do, worry as they do, care as they do. Remember Scout Finch who got in trouble at school for teaching herself to read; Odysseus who solved his way home to his wife Penelope; the stubborn Jane Eyre who declined guff from her boss; Holden Caulfield whose world required no catcher in the rye; the clever Tom Sawyer who got his fence painted, or the Time Traveler whose friends lacked the flexibility to understand his accomplishment?

### **Classic Words**

Another reason to provide gifted children with a rich exposure to the classics is the rich vocabulary that they nearly always contain. Guess, for example, what book these words come from:

diffidence, placid, adhere, quietus, miscreant, quixotic, reproof, condescend, somber, enigma, phlegmatic, undulate, sublime, resolute, strident, din, amicable, amorous, raconteur, profound, dejection, placid, amiably, tedious, mea culpa, perplex, impede, interpose, incisive, impassive, admonish, aperture, avidly, perfidious, miasma, abject, portal, fain, sanguinary, retort, imperiously, hauteur, patronize, aloof, blithe, boon, cypher, wince, defray, genial, cadaverous, remonstrate, nether, upbraid, solicitous, conveyance, mauve, hitherto, succulent, artifice, proffer, ardent, tremulous, recriminate, assail, virulent, insinuate

Could these words come from a book by Thomas Hardy? Nathaniel Hawthorne? The answer may surprise you; these words come from James M. Barrie's *Peter Pan*, the story of Never Never Land, Pirate Smee, Captain Hook, Wendy, and the boys who would never grow up

(Thompson, 1990, p. 9). In *Peter Pan*, Peter lost his shadow, and Mrs. Darling picked it up, folded it, and put it in a drawer. Hook told Smee to kill Wendy, and Smee said to Wendy, “I have to kill you, but I’ll save you if you’ll be my mother.” She refused. It is a children’s book, but look at the vocabulary. Because such diction is stripped from today’s dumbed-down literature anthologies, and because modern publishing houses usually require authors to avoid such words in children’s stories, the classics have become an increasingly precious source of good vocabulary in children’s literature.

### **Classic Ideas**

If we want students to think, we must give them something substantive to think about. Beyond their sheer strength as language experience, classics confront students with a divergent cacophony of contending ideas, as expressed by history’s least restrained thinkers. Classics free students from the insipid slumber of textbooks, and shock them to thought with the meanings of humanity’s dissident heroes: Mohandas Gandhi, Henry David Thoreau, Martin Luther King, Thomas Jefferson, Emily Dickinson, Frederick Douglass. Think, these voices say, think. Be free. Be unafraid. Resist tyranny. Protect people. Create. Reject nonsense. Apply your ethics, Pursue happiness. The classics are an intellectual hailstorm of divergent ideas. And once students have read a sufficient number of these books, they come to expect ideas, and to relish the thinking that ideas demand. Here is an example of an idea from the classics. See if you can guess what book this passage comes from:

There is an ecstasy that marks the summit of life, and beyond which life cannot rise. And such is the paradox of living, this ecstasy comes when one is most alive, and it comes as a complete forgetfulness that one is alive. This ecstasy, this forgetfulness of living, comes to the artist, caught up and out of himself in a sheet of flame...

Is this from Aristotle? From the letters of Van Gogh? From Picasso? In fact, these words are found in Jack London’s dog book, *The Call of the Wild*. London did not shrink from putting such ideas in a story he knew would be read by children as well as adults.

### **2. Ancient Words Within Modern Words - Vocabulary**

In addition to reading broadly in the classics, a thorough study of the ancient foundation of modern English vocabulary is essential to developing verbal talent.

This recommendation flies in the face of current dogma that forbids direct instruction in vocabulary and that favors vocabulary development through the study of words as they appear in the context of literature. Although pondering words as you find them is a fine behavior, it is too ponderous to suffice as a complete vocabulary development strategy. Gifted students need something faster, more academic, and more targeted toward the Latin-based language that pervades the realm of high achievement.

I once read a research study showing that if you learned the 100 most common Greek and Latin stems in English—such as *pre*, *sub*, *super*, *poly*, *auto*, or *biblio*—you would gain an understanding of 5,000 words. Learning the Latin foundation, in other words, is the fast track, the power path to a strong vocabulary. This would seem reason enough to acquire a grounding in etymology, but once you become involved in it, many more reasons emerge. Let’s look at some of the advantages of studying Greek and Latin stems:



Power Learning - Because each stem appears in dozens of words and in combination with other stems that reappear, the learning is more powerful than learning one word at a time. When we learn *pre*, we have learned part of *premonition*, *prescient*, *prefabricate*, *prenuptial*, and dozens of other words that describe something happening beforehand.

Spelling - One of the great benefits of the ancient stems is that thousands of English words are nothing more than two or three stems in a row, so to learn stems is automatically to learn the spelling of thousands of words. Look how perfectly these words break into stems: *circum vent*; *mono mania*; *auto graph*; *omni potent*; *pseudo nym*; *geo logy*; *post script*; *osteo logy*; *xeno phobia*; *ecto derm*, *ortho dox*; and *thermo meter*. Furthermore, when you spell by stems, the spelling units are cognitive units; each stem you spell has meaning. When you know that *omni* means all and *potent* means power, you have a different feeling about *omnipotent* from someone who doesn't know that.

Standardized tests - Like it or not, our children's future depends partly on their performance on standardized tests. If you examine SAT vocabulary pages, you see that the questions are arranged in order of difficulty. On an SAT analogies page, the first few questions are so easy that almost everyone gets them right, but the final few are so difficult that almost no one gets them right. Guess where the stem-based words such as *supercilious* and *vociferous* appear? Right, they appear in the final questions. Kids who have studied the stems will have a chance at an analogy like *sotto voce* is to *vociferous* as...

Micropoems - Ordinary dictionary definitions are only the surface of what words offer. When you know the pieces the word is made of, you see that some of humanity's best insights are captured within the words we use. An example is the word *respect*, which is an ordinary word that most elementary students could define. We might say that to respect is to admire, to esteem, to hold in high regard. But when we look at the stems in the word, we see *re*, again, and *spect*, look. Suddenly, we realize the micropoetry of the word; at the moment that we come to respect someone, we find ourselves *looking* at them *again*, in a new way. This epiphany is captured in the amber of the etymology, and is only visible to children who have studied the ancient stems.

A sense of history - The student of stems knows that language wasn't invented new in our time. Our language is a vast collection of echoes, and we are reviving and continuing the sounds of ancient voices with each sentence.

Advanced vocabulary - Many of the stem-based words are big words. Science and technology are filled with these Latinate combinations that seem so difficult to most people, but so easy to students who have learned what they are made of. One of the great advantages to studying the stems is that it converts arcane erudition into child's play. A word like *supercilious*, which means condescending, is easy once you realize that it is made of *super*, over, and *cilia*, hair, and refers to the raised eyebrow of the snob! The beauty of teaching such words to younger students is that it refutes the age-graded vocabulary myth that retards American education. All across America, young children can pronounce and understand *Tyrannosaurus Rex* or *San Francisco Forty-Niner*, but they are considered too young to learn *serene* means calm.

### **3. Grammar: A Way of Thinking about Our Own Ideas**

In a language program for the gifted, clearly it is necessary to adopt a diagnostic-prescriptive approach to teaching grammar and usage since these students are capable of mastering the language system much more rapidly than other learners and in a shorter time period than is allotted in the regular school curriculum. (VanTassel-Baska, 1988, p. 167)

Among the curricula that American education has neglected, and sometimes discarded, is traditional grammar, which has been tossed aside as unteachable, unlearnable, unlikable, useless, and inappropriate for gifted learners because it is remedial and low. There are school systems in the country where the teaching of grammar is forbidden, and teachers get bad evaluations if they violate the prohibition.

The fact is that grammar is quite teachable, most learnable, fun, valuable, and highly appropriate for gifted kids because it is a high form of critical thinking about language. And language, be it recalled, is the utterance of human thought. Sentences do not occur in nature. Sentences are manifestations of the mind, and sentences are a medium of the mind. When we use grammar to examine sentences, we are undertaking a profound metacognitive exploration.

Why is grammar teachable and learnable? It is easy to forget, when looking at a ponderous grammar textbook, what a little topic grammar is. The total number of terms necessary to acquire the useful fundamentals of traditional grammar is about fifty terms. There are only eight parts of speech, about five parts of the sentence, several kinds of phrases, and a few clauses. By expanding each term into five homework exercises, we can drag the subject on until May of every school year, but it is easy to compact these four little levels of grammar into the first weeks of class, and usefully apply the grammar to all of the other language experiences during the year.

#### **Key Points and Recommendations**

- Verbal talent will not develop on its own. It develops in reaction to challenge, which is an encounter with something beyond one's capability. To meet the challenge, a new ability must be generated.
- Classic literature presents a complete spectrum of challenge at many levels, including the level of language, the level of idea, and the level of meaning.
- It is impossible for most schools to assign the number of books that gifted readers really need. For this reason, parents should prepare for an investment at the book store, which is the best money they will ever spend.
- Schools take different approaches to the study of vocabulary. Some use only a whole language approach that prohibits direct instruction of vocabulary in favor of studying words as they are encountered in text. Gifted students need two forms of direct instruction in vocabulary; first, they need a solid grounding in Greek and Latin stems, and second, they need to study the classic words. It is essential that each student have an excellent, college-level dictionary, preferably in hardback, that contains not just definitions but etymologies, and the etymology should be studied every time a student looks up a word.

- The negative stereotype of grammar as a tedious waste of time should be rejected. Students must attack grammar with enthusiasm in order to use it as a high form of critical thinking about language. This will produce self-knowledge, appreciation of literature, and an ability to enjoy making good sentences and compositions.
- Many of the great intellects of history have been partly or completely self-taught. If your child is fortunate enough to be in a wonderful school, it is a blessing, but if not, then it is not unprecedented to take responsibility for educational accomplishment. At the deepest level, education is an internal act, and students who understand the importance of language can deliberately move forward into areas of challenge in reading, vocabulary, and grammar, with the support of their schools and families.

For gifted children, the development of verbal talent is among deepest joys and most critical preparations of life, but the talent will not develop on its own. If we support and encourage a child by providing access to books, motivation to read, enlightenment about grammar, and enthusiasm for words, then the child will move forward into exciting experiences in language that will be catalysts for the development of verbal talent, and each new strength will be a springboard to another. In time, the child will become a young adult, who arrives at that moment with a long background in books, and ideas, and carefully chosen words. The talent will be developed, and developing, and it will be time for these experiences to be transformed into accomplishments and creativity that never would have happened if, years ago, the child had not been challenged.

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An expanded version of this article is the text of the keynote address given to The Texas Association for the Gifted's Conference in December, 2001. It contains multiple suggestions of books to read, words to learn and more. This abbreviated version is reprinted with permission from Michael Thompson. For an expanded version and much other valuable information, visit <http://homepage.mac.com/mith>.

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## **Discovering Mathematical Talent**

By Richard C. Miller

Sara, who is 5 years old, listens as her 32-year-old father comments that today is her grandmother's 64th birthday. "Grandma's age is just twice my age," he observes.

Although outwardly Sara does not seem to react to this information, her mind is whirling. A few moments pass, and then the young girl excitedly replies, "You know Dad, you will only be 54 when your age is twice mine!"

Sara has been intrigued by numbers and numerical relationships since she was very small. At first this could be seen in the way she liked to count things and organize groups of objects. She showed a fascination for calendars, telephone numbers, dates, ages, measurements, and almost anything else dealing with numbers. Sara learned and remembered this information quickly and easily, but what was even more amazing was the way she played with and manipulated the information she was learning. She would carefully examine each idea and eagerly search to discover new, interesting, and unusual relationships and patterns. Although Sara has had little formal instruction in mathematics, at the age of 5 she has acquired an incredible amount of mathematical knowledge and is amazingly sophisticated in using this knowledge to discover new ideas and solve problems.

Sara is an example of a young child who is highly talented in the area of mathematics. Like most individuals with this unusual talent, Sara exhibits characteristics and behaviors that are clues to her ability. Some mathematically talented people radiate many or obvious clues, others offer only a few, or subtle ones. Recognizing these clues is often an important first step in discovering an individual's high ability in mathematics. It is difficult to believe, but many people with a high degree of mathematical talent have their talent underestimated or even unrecognized. Their clues have gone unnoticed or ignored, and the true nature of their ability remains unexplored. If Sara's talent in mathematics is to be discovered and appropriately nurtured, it is important that her parents and teachers recognize the clues.

### **WHAT SHOULD PARENTS AND TEACHERS KNOW TO HELP THEM BETTER RECOGNIZE MATHEMATICAL TALENT?**

Mathematical talent refers to an unusually high ability to understand mathematical ideas and to reason mathematically, rather than just a high ability to do arithmetic computations or get top grades in mathematics. When considering mathematical talent, many people place too much emphasis on computational skill or high ability in replicating taught mathematical procedures. Unless mathematical talent is correctly perceived, however, important clues can be overlooked and less important clues can be given too much significance.

Some characteristics and behaviors that may yield important clues in discovering high mathematical talent are the following:

- An unusually keen awareness of and intense curiosity about numeric information.
- An unusual quickness in learning, understanding, and applying mathematical ideas.
- A high ability to think and work abstractly and the ability to see mathematical patterns and relationships.
- An unusual ability to think and work with mathematical problems in flexible, creative ways rather than in a stereotypic fashion.
- An unusual ability to transfer learning to new, untaught mathematical situations.

Terms such as mathematically talented, mathematically gifted, and highly able in mathematics are generally used to refer to students whose mathematics ability places them in the top 2% or 3% of the population. It is important to keep in mind the unusually high degree of talent that is being sought when looking for mathematically talented individuals.

Not all students who achieve the highest test scores or receive the highest grades in mathematics class are necessarily highly talented in mathematics. Many of the mathematics programs in our schools are heavily devoted to the development of computational skills and provide little opportunity for students to demonstrate the complex types of reasoning skills that are characteristic of truly talented students. The tests used and the grades given in such programs usually reflect that structure. Computational accuracy and conformity to taught procedures may be overemphasized, and the reasoning abilities associated with high ability in mathematics may be underemphasized. In this type of environment, test scores and grades of less able students who are good in computation, attentive in class, willing to help, and conscientious about completing all assignments carefully in the prescribed manner will often be as high as the test scores and grades of students who are genuinely talented in mathematics. While high achievement in school certainly can be a clue to high ability in mathematics, additional information is needed. If care is not taken, students who are simply high achievers in mathematics can be mistakenly identified as mathematically talented. It is just as important to avoid such incorrect identification as it is to identify students who are truly mathematically talented.

Some mathematically talented students do not demonstrate outstanding academic achievement, display enthusiasm toward school mathematics programs, or get top grades in mathematics class. It is important to know that there are students like this, for their ability in mathematics is easily overlooked, even though they may exhibit other clues suggesting high ability in mathematics. There are many possible reasons why these students do not do well, but often it is at least in part because of a mismatch between the student and the mathematics program. Many of them refuse, or are unable, to conform to the expectations of programs that they see as uninteresting and inappropriate. For their part, educators may not recognize the true ability of these students or see a need for adjusting the existing mathematics program.

## **HOW CAN STANDARDIZED TEST RESULTS HELP IN RECOGNIZING MATHEMATICAL TALENT?**

**INTELLIGENCE TESTS.** IQ test results often yield valuable information and may provide clues to the existence of mathematical talent. Used alone, however, these tests are not sufficient to identify high ability in mathematics. Mathematical talent is a specific aptitude, while an IQ score is a summary of many different aptitudes and abilities. An individual's IQ is made up of several different components, only some of which relate to mathematical ability. Suppose two students have the same IQ scores. One of them could have a high score in mathematical components and a low score in verbal components, while the other is just the opposite. The first student would be likely have to much greater mathematics ability than the second, even though they have the same overall IQ. Children with high IQ's--no matter how high the score--cannot be assumed to be mathematically talented. It could be a clue, but more information is needed.

**CREATIVITY TESTS.** There are differing opinions on how the results of creativity tests can be used to help identify high ability in mathematics. Although mathematically talented students display creativity when dealing with mathematical ideas, this is not always apparent in creativity test results. However, high creativity assessments, along with indications of intense interest in mathematics, do seem to be a significant clue of mathematical talent.

**MATHEMATICS ACHIEVEMENT TESTS.** Mathematics achievement tests also can provide valuable clues in identifying high ability in mathematics, but the results of these tests have to be interpreted carefully. Mathematics achievement tests are often computation-oriented and give little information about how a student actually reasons mathematically. Also, the tests seldom have enough difficult problems to appropriately assess the upper limits of a talented student's ability or show that this ability is qualitatively different from that of other very good, but not truly mathematically talented, students. If these limitations are kept in mind, the results of mathematics achievement tests can be useful. Students scoring above the 95th or 97th percentiles on national norms may have high ability in mathematics, but more information is needed to separate the high achievers from the truly gifted. It should not be assumed that there are no mathematically talented students among those scoring below the 95th percentile; those students will have to be recognized from other clues.

**MATHEMATICS APTITUDE TESTS.** Standardized mathematics aptitude test results should be used in basically the same way that the results of mathematics achievement tests are used. Aptitude tests have some of the same limitations as achievement tests except that, because they are designed to place less emphasis on computational skills and more emphasis on mathematical reasoning skills, the results from these tests are often more useful in identifying mathematically talented students.

**OUT-OF-GRADE-LEVEL MATHEMATICS APTITUDE TESTS.** Many of the limitations associated with mathematics aptitude tests can be reduced by administering out-of-grade-level versions of the tests. This process should be used only with students who already have demonstrated strong mathematics abilities on regular-grade-level instruments or those who show definite signs of high mathematics ability. An out-of-grade-level mathematics aptitude test is a test that is usually designed for and used with students about one and one-third times the age of the child being tested. For example, a 9-year-old third grader would be tested using an abilities test normally written for 12-year-old sixth graders. This gives a much better assessment of mathematical reasoning skills because the student must find ways to solve

problems, many of which he or she has not been taught to do. These tests have many difficult problems that will challenge even the most capable students, thus making it possible to discriminate the truly talented from others who are just very good in mathematics.

The out-of-grade-level testing procedure has been used successfully in several mathematics talent searches and school mathematics programs with junior and senior high school students over the past 15 years. More recently, there have been programs that have successfully used the procedure in the elementary grades.

### **WHAT SYSTEMATIC PROCESS CAN BE USED TO IDENTIFY MATHEMATICALLY TALENTED STUDENTS?**

Correctly identifying mathematically talented students is not a simple task, and there is more than one way to go about it. Some common features of successful identification processes are combined in the following model. This model is intended to be implemented with a degree of flexibility in order to give mathematically talented students every opportunity to have their talent discovered. This may be especially important when looking for mathematical talent in minority or disadvantaged populations.

#### **PHASE ONE: SCREENING**

The objective in phase one is to establish a group of students suspected of having high ability in mathematics. These students will be evaluated further in the next phase. In phase one, effort should be made not to miss potentially talented students.

STEP ONE. An identification checklist (Figure 1) should be set up to record the names of students thought to have high ability in mathematics along with the clues that suggest their talent. Students scoring above the 95th percentile on a mathematics aptitude test are entered first. Next, those scoring above the 95th percentile on mathematics achievement tests who are not already on the list are added. If a student's name is already on the list, the test score is simply added to that student's record. In a like manner, students who are mentally gifted; students who are creative and have high interest in mathematics; and students nominated by parents, teachers, self, or peers can be added.

STEP TWO. The checklist information for each student should be reviewed. If the information collected for a particular student suggests that out-of-grade-level testing is not advisable, that student's name should be removed, because phase two testing may damage the egos of students who do not really excel in mathematics. However, caution should be exercised not to eliminate talented students in this process. Parent involvement in these decisions is recommended.

#### **PHASE TWO: OUT-OF-GRADE-LEVEL MATHEMATICS ABILITIES ASSESSMENT**

The objective in phase two is to separate the mathematically talented students from those who are merely good students in mathematics and to begin assessing the extent of the ability of the mathematically talented students.

STEP ONE. Students who are scheduled to take the out-of-grade-level test, along with their parents, should be informed about the nature of this test and the reason it is being given. The

out-of-grade-level test would then be administered with student and parent consent. Figure 2 provides a sample schedule for such testing.

**STEP TWO.** The results of each student's out-of-grade-level test should be evaluated in conjunction with the results of phase one screening. Generally, the student's out-of-grade-level score will be an indication of degree of mathematical talent. Scores above the 74th percentile represent a degree of mathematical talent similar to that of students identified in regional talent searches such as the one conducted by Johns Hopkins University. This level of talent places the student in the upper 1% of the population in mathematics ability. Scores above the 64th percentile denote a level of talent that most likely places the student in the upper 3% of the population. Students in these two groups would be identified as mathematically talented.

### **WHAT INSTRUCTIONAL APPROACHES BENEFIT MATHEMATICALLY TALENTED STUDENTS?**

Students identified as mathematically talented vary greatly in degree of talent and motivation. No single approach is best for all of these students. The design of each student's instructional program in mathematics should be based on an analysis of individual abilities and needs. For example, students with extremely high ability and motivation may profit more from a program that promotes rapid and relatively independent movement through instructional content. Students with less ability or lower motivation may do better in a program that is not paced so quickly and is more deliberate in developing the mathematical concepts being taught. There are some common features, however, that seem to be important ingredients in the mathematics programs of mathematically talented students.

The program should bring mathematically talented students together to work with one another in the area of mathematics. Students will benefit greatly, both academically and emotionally, from this type of experience. They will learn from each other, reinforce each other, and help each other over difficulties.

The program should stress mathematical reasoning and develop independent exploratory behavior. This type of program is exemplified by discovery learning, looking for underlying principles, engaging in special projects in mathematics, problem solving, discovering formulas, looking for patterns, and organizing data to find relationships.

The mathematics program should de-emphasize repetitious computational drill work and cyclical review. This type of work in mathematics should be minimal for all mathematically talented students. As ability in mathematics increases, the benefits to be gained from this type of activity decrease.

The scope of the mathematics curriculum should be extensive so that it will provide an adequate foundation for students who may become mathematicians in the future. In many programs the mathematics curriculum will have to be greatly expanded to meet this need.

The mathematics program should be flexibly paced. Flexibly paced means that students are placed at an appropriate instructional level on the basis of an assessment of their knowledge and skill. Each student is then allowed to progress at a pace limited only by his or her ability and motivation. Flexible pacing can be achieved in the following ways:



- Continuous progress. Students receive appropriate instruction daily and move ahead as they master content and skill.
- Compacted course. Students complete two or more courses in an abbreviated time.
- Advanced-level course. Students are presented with course content normally taught at a higher grade.
- Grade skipping. Students move ahead 1 or more years beyond the next level of promotion.
- Early entrance. Students enter elementary school, middle school, high school, or college earlier than the usual age.
- Concurrent or dual enrollment. Students at one school level take classes at another school level. For example, an elementary school student may take classes at the middle school.
- Credit by examination. Students receive credit for a course upon satisfactory completion of an examination or upon certification of mastery.

## CONCLUSION

The fate of Sara and other mathematically talented students will be determined largely by the ability of their parents and educators to discover and nurture their special ability. The notion that these students will achieve their potential anyway is constantly refuted. For too many students like Sara, lack of appropriate mathematical nourishment seems to be the rule rather than the exception. At risk are the benefits that these children might gain from early advancement and the attitudes that these children will have toward mathematics, school, learning in general, and themselves. By discovering the mathematical talent of these students and using that knowledge to provide appropriate academic nurture, we have the greatest chance to help these individuals reach their gifted potential.

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## **Planning Science Programs for High Ability Learners**

By Joyce VanTassel-Baska

What subject most intrigues young high ability learners? What subject is still rated highly by middle school academically talented learners? Interestingly, the answer is science even though it is taught less frequently than any other subject prior to middle school. Clearly, we need to ensure that appropriate curriculum is in place for such students from K-12. In a time of curriculum reform and a national goal of becoming Number One in the world by the year 2000, movement on this issue should be compelling to all educators.

### **SCIENCE REFORM RECOMMENDATIONS**

Based on reports over the past 12 years, it is clear that students have not been achieving well in science (National Commission on Excellence in Education, 1983), advanced courses have been poorly subscribed to or not offered by many secondary schools (National Science Board, 1983; Bybee, 1993), and girls and minority students have been dropping out of the science track as early as possible (Hilton, Hsia, Solorzano, & Benton, 1989). On the instructional side of science, it has become evident that elementary teachers were not teaching science because they did not know the content nor feel secure with it as a subject area (Rutherford & Ahlgren, 1989); little instructional time in elementary schools was devoted to science (NAEP, 1988); and where science was taught, basal texts that emphasized reading and canned experiments were preferred and used over active learning (Lockwood, 1992a; 1992b).

In order to address the problems of science teaching and learning, key national groups including scientists and science educators collaborated on a set of science concepts and processes deemed essential for K-12 learners to understand and master (Rutherford & Ahlgren, 1989). Other groups such as the National Science Foundation, the National Academy of the Sciences, and the National Science Teachers Association have responded through the development of teacher enhancement programs and curriculum development recommendations. Project 2061 (1993) has published benchmarks of science literacy goals that concentrate on a common core of learning. More recently, the National Research Council (1996) has also published a set of national science standards. In this climate of education reform, the role of exemplary curriculum becomes a primary consideration in the attempt to improve both gifted and science education.

### **RESEARCH ON GIFTED LEARNERS IN SCIENCE**

The research literature also contains many ideas for improving science education. The Third International Math and Science Study (TIMSS), which ranks the United States in the top half of participating nations at grades 4 and 8, suggests that more instructional time on experimental science activities would be useful, as would a focus on correcting misconceptions in science learning (U.S. Department of Education, 1996).

Moreover, opportunities for earlier access to advanced content need to be available to gifted students in science. Cross and Coleman (1992) conducted a survey of gifted high school students, finding that their major complaint about science instruction was the frustration of being held back by the pace and content of courses. In a 6-year study of middle school age gifted learners taking biology, chemistry, or physics in a 3-week summer program, these younger learners outperformed high school students taking these courses for a full academic year (Lynch, 1992). Follow-up studies documented continued success in science for these students, suggesting a need for academically advanced students to start high school science level courses earlier and be able to master them in less time. Evidence also suggests that advanced study in instructionally grouped settings based on science aptitudes promotes more learning for all students (Hacker & Rowe, 1993).

Data from several summer Governor's School programs in science have demonstrated the positive impact of such programs on students' continuing with the scientific enterprise in college (Enersen, 1994). The major impacts from the experience appeared to center around the collaborative opportunities to work with talented faculty and a highly able peer group. Such reports point to a continued need to provide and structure collaborative opportunities for these learners.

Recent work in using problem-based learning in teaching science to high ability learners at the elementary level suggests the efficacy of the approach in enhancing student and teacher motivation (VanTassel-Baska, Bass, Ries, Poland, & Avery, 1998); in improving problem-finding abilities (Gallagher, Stepien, & Rosenthal, 1992); and in promoting intra and interdisciplinary learning (Stepien, Gallagher, & Workman, 1993). Recent studies have also identified the materials that are most appropriate for use with high ability students in elementary science programs (Johnson, Boyce, & VanTassel-Baska, 1995), citing those that provide a balance of content and process considerations, including an emphasis on original student investigations, concept development, and interdisciplinary applications. Other studies suggest the importance of science mentors and more emphasis on laboratory-based science as central tenets of providing high-end learning opportunities in science at all levels.

### **WHAT SHOULD A SCIENCE CURRICULUM FOR GIFTED STUDENTS INCLUDE?**

At the Center for Gifted Education at the College of William and Mary, the past six years have been spent addressing issues of appropriate science curriculum and instruction for high ability students as well as melding those ideas to the template of curriculum reform for all students in science. Consequently, the elements essential for high ability learners also have saliency for other learners as well. The most important include the following elements.

--An emphasis on learning concepts.

By restructuring science curriculum to emphasize those ideas deemed most appropriate for students to know and grounded in the view of the disciplines held by practicing scientists, we allow students to learn at deeper levels the fundamental ideas central to understanding and doing science in the real world. Concepts such as systems, change, reductionism, and scale all provide an important scaffold for learning about the core ideas of science that do not change, although the specific applications taught about them may.

--An emphasis on higher-level thinking.

Students need to learn about important science concepts and also to manipulate those concepts in complex ways. Having students analyze the relationship between real world problems, like an acid spill on the highway, and the implications of that incident for understanding science and for seeing the connections between science and society provides opportunities for both critical and creative thinking within a problem-based episode.

--An emphasis on inquiry, especially problem-based learning.

The more that students can construct their understanding about science for themselves, the better able they will be to encounter new situations and apply appropriate scientific processes to them. Through guided questions by the teacher, collaborative dialogue and discussion with peers, and individual exploration of key questions, students can grow in the development of valuable habits of mind found among scientists, such as skepticism, objectivity, and curiosity (VanTassel-Baska, Gallagher, Bailey, & Sher, 1993).

--An emphasis on the use of technology as a learning tool.

The use of technology to teach science offers some exciting possibilities for connecting students to real world opportunities. Access to the world of scientific papers through CD-ROM databases offers new avenues for exploration. Internet access provides teachers wonderful connections to well-constructed units of study in science as well as ideas for teaching key concepts, and e-mail allows students to communicate directly with scientists and other students around the world on questions related to their research projects.

--An emphasis on learning the scientific process, using experimental design procedures.

One of the realities we have uncovered is how little students know about experimental design and its related processes. Typically, basal texts will offer canned experiments where students follow the steps to a preordained conclusion. Rarely are they encouraged to design their own experiments. Such original work in science would require them to read and discuss a particular topic of interest, come up with a problem about that topic to be tested, and then follow through in a reiterative fashion with appropriate procedures, further discussion, a reanalysis of the problem, and communication of findings to a relevant audience.

### **WHAT CAN TEACHERS DO TO MAKE THESE REFORM EFFORTS SUCCESSFUL?**

In order to ensure that science reform is successful, administrators, teachers, and parents need to consider the following approaches to help the reform effort succeed.

--The selection of modular materials rather than basals for classroom use.

There are excellent science materials available that will promote the teaching described here (Johnson, Boyce, & VanTassel-Baska, 1995). However, districts must be willing to use such materials rather than insisting on the purchase of basals which do little to promote the desired kind of science learning. Moreover, there are excellent supplementary materials also attuned to the new science agenda that can augment any school science program.

--The training of teachers in content-based pedagogy.

If we wish to improve teaching and focus on student learning, then teachers need help in teaching for understanding (Cohen, McLaughlin, & Talbert, 1993). In order to do that, we

need to emphasize strategies and instructional approaches in the context of content rather than separate from it. One good way to approach such training is to use high-quality materials as the basis for the training sessions to ensure the integration of content and pedagogy. Skills needed then by teachers of high ability learners in science include strong content knowledge and skills in teaching it, flexibility in classroom management, and the capacity to question student understanding through metacognitive and assessment techniques.

--The employment of curriculum monitoring processes in schools.

No matter what new emphasis schools wish to see implemented, there is a need to ensure that the innovation has been implemented faithfully. Where that is not happening, suitable measures may be employed to ensure that such change will occur in the future. Research on staff development as well as effective teaching demonstrates the need to provide systematic follow-up procedures to ensure teacher action (Joyce & Showers, 1995). Whether such monitoring occurs through peer coaching programs, supervisory procedures of the principal, or curriculum specialists is not as important as the fact that it occurs at all.

### **CONCLUSIONS**

Appropriate science curriculum that promotes high quality learning is desirable for all learners. Access to such learning is mandatory for students demonstrating a strong yearning for substantive and challenging science curriculum in schools. Teachers and administrators alike need to recognize that gifted learners must be challenged in their area of greatest interest and potential expertise. The world can only benefit from motivating the future Marie Curies, Booker T. Washingtons, and Michael Faradays.

### **CURRICULUM REFORM CLASSROOM INDICATORS**

Do our classrooms contain the following elements? Answer yes or no.

- Curriculum focuses on important concepts (e.g., systems, change, patterns, models).
- Curriculum emphasizes the research process within an integrated framework (e.g., exploring a topic, planning how to study it and carrying out a study, judging results, and reporting).
- Curriculum focuses on substantive content.
- Instruction is inquiry-oriented, using strategies like problem-based learning and higher level questioning.
- Instruction is activity-based, engaging students in the doing aspect of learning.
- Assessment of learning includes performance-based approaches such as use of real-world problems for students to demonstrate understanding and transfer of key ideas and processes.
- Assessment of learning includes a portfolio of student work including individual logs, reports, and other work.
- Students engage in planning and carrying out original research. (Teachers instruct student in experimental design.)
- Students actively discuss real world problems and issues in relationship to societal implications. (Teachers present issues and ask high level questions about them.)

- Students demonstrate thinking processes necessary for doing work in a given discipline; e.g., inference, deductive reasoning, evaluation of arguments. (Teachers ask higher level thinking questions in classroom discussion and activities.)
- Curriculum materials are appropriate for high ability learners in that they reinforce Items 1-10 above.
- Curriculum materials promote student engagement in learning.
- Classroom instruction incorporates appropriate technology as a tool in learning.
- Classroom instruction attends to individual differences in rate of learning.

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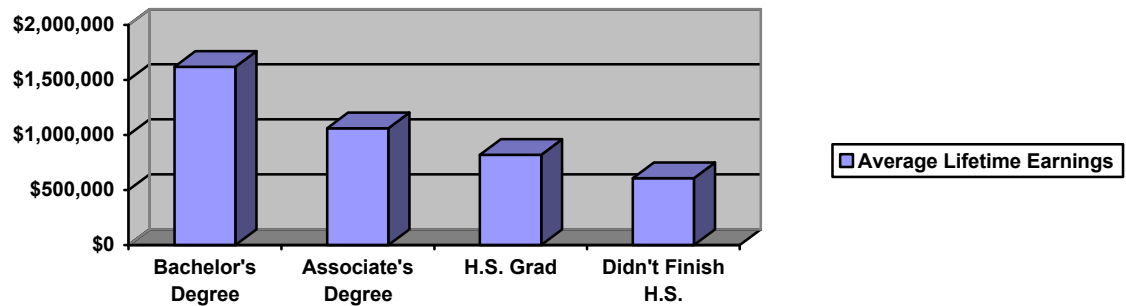
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## Advanced Placement in Indiana: Why You Should Support It

By Ginny Burney

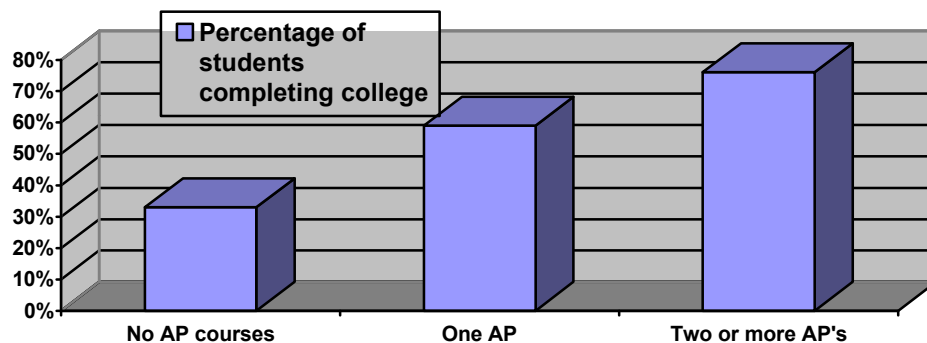
According to the Indiana Career and Postsecondary Advancement Center, on average, people with college degrees earn 60 percent more than people with high school diplomas. College graduates make nearly twice as much money in a lifetime as high school graduates. A college degree provides more career options and increases job security.



Indiana ranks in the bottom five states in the percentage of the population with a college degree. Advanced Placement courses are a way to improve the preparation of Indiana high school students for college.

Indiana also ranks in the bottom five states in the pass rate of its students on Advanced Placement exams.

The Advanced Placement (AP) program is administered by the College Board, the same organization that administers the SAT program. Taking Advanced Placement courses in high school and scoring a 3, 4, or 5 on the AP exams is one of the best ways to prepare for college. Clifford Adelman's study "Answers in the toolbox: academic intensity, attendance patterns, and bachelor's degree attainment," published in 1999 by the U.S. Office of Educational Research and Improvement, provides these data:



### What is Advanced Placement (AP)?

- AP enables high school students to take college-level courses.
- The College Board's Advanced Placement Program has 35 courses in 19 subject areas and offers standardized exams in those areas worldwide each spring.

- Each AP course was developed collaboratively by college faculty and high school AP teachers and covers the content, skills and work found in the corresponding college course.
- There are AP workshops and summer institutes that offer intensive subject-specific training for high school teachers.
- There is NO participation fee to schools to offer AP courses. Students pay \$78 per exam to take the optional exam at the end of the course. Indiana pays for the exam fees for students in math, science, and English. There is sometimes other funding available for qualifying students.
- Over 90% of U.S. colleges have an AP policy granting incoming students course credit, accelerated placement or both for qualifying AP scores.
- Only AP and International Baccalaureate (IB) have standardized, end-of-course exams that require students to demonstrate mastery of subject matter. These exams are what colleges accept as proof of preparation and allow them to compare students from differing schools, backgrounds and areas of the country.

### **Are Gifted Education and AP Different?**

AP is not a pure example of gifted education. While it is a more rigorous curricular option than is frequently available to high school students, courses are not designed to promote many of the things that are present in good gifted education. True gifted education offers students of exceptional ability opportunities for both critical and creative thinking. True gifted education promotes interdisciplinary study, meta-cognition, exploration of areas of study outside traditional high school subjects, the use of mentors, seminars and independent study. True gifted education is much more than the greater-depth content or accelerated study of traditional subjects. Furthermore, success in AP is not limited to the gifted although most of those who achieve success on multiple AP exams would likely meet the criteria of local gifted programs. AP courses should be open to all students who are ready and willing to take on the challenge.

### **Why Is AP a Program to Promote in Indiana?**

Legislators, school administrators and school boards are already familiar with the AP Program.

- Indiana Law already requires schools to provide AP courses. (IC20-10.1-22.2-5) “Beginning July 1, 1994, each school corporation shall provide the College Board’s science and math advanced placement courses in secondary schools for students who qualify to take the advanced placement courses.” [It must be noted that not all schools in Indiana offer these classes; some state they do not have qualified students. This is a tremendous disservice to students of these schools as it puts these students at a disadvantage in competing with others for admission into selective colleges, scholarship opportunities, and success in college. These schools should make greater efforts to prepare students to be successful in college level work.]
- Indiana has paid the exam fees for students in math, science and English (and hopefully will continue).
- Indiana Law requires each school corporation to publish, conduct a hearing and discuss an Annual Performance Report which must contain the number of students

with scores of 3 or higher on Advanced Placement Exams and the percentage of 11th and 12<sup>th</sup> graders tested.

- The new P.L.221 requires those items reported in the Annual Performance Report to be used as secondary indicators of school and district improvement.
- It is a proven, widely known, nationally accepted program.
- Indiana ranks near the bottom of all states in the percentage of students receiving a score of 3 or higher on AP exams and lags in the increase in participation in AP when compared to other states.

It benefits high ability students individually.

- A recent U.S. Department of Education study showed that successful AP participation was one of the strongest predictors of college success.
- A recent study commissioned by the College Board showed students who do well on the AP Calculus and AP Physics exams meet or exceed top performing students in the other nations participating in the TIMSS study.
- Due to AP credits earned, many students are able to take other courses in college which fulfill requirements for double majors, allow early graduation, free up time for study abroad, or combine bachelor's and master's programs within the 4 year college experience.

It benefits the school and the school corporation.

- Improving participation in AP courses is an approved demonstration of school improvement.
- AP teacher training is a proven, professional development program with accountable results.
- Schools receive recognition for the achievement of their successful AP students.
- Including and expanding AP course offerings frequently results in the diffusion of higher academic standards throughout the curriculum.
- AP courses at the high school benefit from students having had challenging and rigorous courses in grades 10 and below. This encourages schools to offer advanced math classes, honors classes in all areas, and gifted programs. The College Board has a Pre-AP program of teacher professional development workshops that help middle school and high school teachers build demanding curriculum and form vertical teams that work together to prepare students for success in AP.

### **AP at Indiana's High Schools – Where Is Your School?**

For information about how your school district compares in Advanced Placement achievement, view the Indiana Department of Education website at [www.ideanet.state.doe.in.us](http://www.ideanet.state.doe.in.us). Go to K-12 School Data, then select Data for One School or School Corporation. Your school district's Annual Performance Report is required to include information about the number of students participating successfully in the AP Program. IAG encourages you to ask your superintendent and school board questions about AP participation in your school.

To find out more about Advanced Placement:

College Board Home Page:

[www.collegeboard.com](http://www.collegeboard.com)

College Board AP Home Page

[www.collegeboard.com/ap](http://www.collegeboard.com/ap)

College Board Professional Educators Home Page

[www.collegeboard.com/prof](http://www.collegeboard.com/prof)

**Advanced Placement Is Not Just a High School Issue.**

A school corporation will demonstrate improvement in the number of students who are qualified and prepared to be successful in AP only if students have had early opportunities for advanced and rigorous curriculum in the years preceding AP. It is during the earlier grades that students gain the background and study skills to be successful in the demanding work of AP courses. Schools with strong academic programs, K-12, have the best chance of successful AP programs and schools with strong AP programs usually have honors classes and gifted programs at younger grades. These programs can go hand in hand, each benefiting the other. There needs to be greater collaboration between programs for gifted students and Advanced Placement.

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## **Homeschooling Gifted Students: An Introductory Guide for Parents**

By Jacque Ensign

During the last 20 years, increasing numbers of families in the United States have chosen to educate their children at home or outside the conventional school environment. Current estimates range from 500,000 to 1.2 million students (Lines, 1991, 1995; Ray, 1996). Of that number, a significant percentage of families have chosen homeschooling as the educational option for their gifted children.

### **CHALLENGES AND OPPORTUNITIES**

When families consider homeschooling, there are many issues to explore.

**Time commitment.** Homeschooling requires an enormous time commitment by at least one parent. However, many parents of highly gifted children are already actively committed to their children's education. Parents find themselves trying to squeeze in extra hours for music, dance, and art. Frequently, their evenings are spent enriching the classroom curriculum so their children will continue to be academically challenged. These parents claim that homeschooling is a way to tailor their children's education to specific needs and interests at the appropriate academic challenge level, and to create an integrated educational environment that includes a wide range of activities.

Talk together as a family to decide if this is the appropriate choice for you. As with any educational option, homeschooling works better for some students and parents than for others. Some find the demands and intensity of homeschooling to be too stressful; others love the freedom and challenge.

**Resources and financial considerations.** Homeschooling parents use many resources and materials. These can become expensive, but there are ways to defray some of the costs. Homeschooling parents can borrow from each other, share resources, and make use of common items in the house and natural environments for curriculum material. The public library is a rich resource for books and videos. Many libraries offer interlibrary loans and vacation-loan extensions to the public. The Internet offers a wealth of highly sophisticated information, especially in the academic subject areas. A computer in the house is an advantage, but there are other ways to gain access to the Internet; for example, some public libraries and schools offer access. When considering homeschooling, explore resources and materials in advance. At all levels, verify the type of support schools will provide. If they have a gifted program, they may provide curriculum suggestions and guidelines. Contact others who are homeschooling through your state's homeschooling network.

Academic considerations. Homeschooling can offer increased flexibility and academic challenge. Flexibility is particularly important since many gifted students are uneven in their abilities. For example, a child may be several years ahead in math, but struggling with reading or writing.

Some children excel in all areas and require academic challenges to remain motivated in school. Many of these students sit idly, waiting for the class to catch up (U.S. Department of Education, 1994b). A rigorous, academically challenging curriculum offers the opportunity to insert depth and breadth. For example, the use of primary or original sources and advanced reading material may lead the gifted learner into critical thinking about an academic subject area or an interdisciplinary approach to subject matter. Projects, hands-on learning, and problem-based learning may provide interesting approaches to academic content.

Gifted homeschoolers enjoy opportunities to develop in multifaceted ways and pursue interests without time and curriculum constraints. Individual learning, tutorials, and small group classes are some of the options.

**Social considerations.** Many people have expressed concern about the social life and potential isolation of homeschooled children. Studies of social adjustment and self-esteem indicate that home-educated students are likely to be socially and psychologically healthy (Montgomery, 1989; Shyers, 1992; Taylor, 1986). Homeschooled students tend to have a broader age-range of friends than their schooled peers, which may encourage maturity and leadership skills (Montgomery, 1989). Homeschoolers are not necessarily isolated from others of their age; they meet and socialize with peers in their neighborhood and at community classes and activities.

With concerted effort by families, most homeschoolers can find avenues for social and intellectual interaction. When a student is interested in a topic, efforts can be made to ensure that the student talks with people of various backgrounds and viewpoints. A mentor working individually with the student may add stimulation and challenge. Professional societies and community organizations are a good place to start looking for people interested in sciences such as astronomy, visual and performing arts, and music. Libraries, museums, parks departments, historical sites, scout and sport programs, local businesses, religious groups, and theater groups expand homeschooling programs. Some homeschool groups have formed their own sports teams, and participate in community leagues. Homeschoolers benefit from volunteering in agencies such as hospitals, nature centers, museums, parks, libraries, and businesses. Legal considerations. Homeschooling is legal in all 50 states, Canada, and many other countries. Some states require that parents notify the local school district of their intent to homeschool; others require parents to register with the state department of education. Some permit a homeschool to register as a private school. Many states require yearly proof of student progress. Some states have additional requirements, such as the submission of a curriculum plan or education requirements for parents. Except for yearly standardized testing as an assessment of student achievement, services for homeschoolers have not been routinely available from the states. A few states permit homeschooled students to participate in public school classes or activities. Many state education agencies have a homeschooling liaison to help families understand state requirements. Federally mandated special education services may be available to homeschooled students through the public schools.

Since states vary in their specific requirements, obtain a copy of your state's homeschool law from your state department of education or your state legislator's office. Local homeschool support groups are good sources of information on complying with the local laws and regulations.

### **WAYS TO HOMESCHOOL**

There are many methods of homeschooling; no single method is best. Success often comes through experience, confidence, and willingness to experiment. Many parents prefer the structure and security of a correspondence or purchased curriculum in the first year, switching to their own tailored program once they have developed experience and feel more confident. Some parents prefer to use textbooks and commercial curricula; others prefer to use a variety of resources.

Some parents opt to teach all subject areas to their children; others seek out classes or tutorials for some or all of the subjects, especially for homeschooled high school students. Approaches may vary with individual children and change over time as demands and experiences alter their lives. Reading accounts of other homeschool experiences and getting to know other homeschoolers offers perspective, ideas, and appreciation for the many ways of homeschooling.

### **WHAT RESOURCES ARE AVAILABLE TO DEVELOP OR ASSESS THE QUALITY OF A HOMESCHOOL CURRICULUM?**

Testing and evaluations of subject area competencies can be useful in planning an educational program and assessing its outcomes. A combination of assessments normally provides the most complete picture of a child's progress. Off-grade standardized testing and portfolio evaluations may also be appropriate. Standardized grade-level achievement tests may be available from your local school district or state department of education. These tests can be used to ensure that students are keeping up with local school district grade level competencies. Homeschooling families should plan for objective assessment as part of the curriculum. Not only does objective assessment document achievement, but the results should inform program planning. To investigate the topic of assessment, contact the ERIC Clearinghouse on Assessment and Evaluation (1-800-GO4-ERIC).

Model content and performance standards are available in many of the subject areas. Content standards define what students should know and be able to do. They describe the knowledge, skills, and understanding that students should have in order to attain high levels of competency in challenging subject matter (U.S. Department of Education, 1994a). Performance standards identify the levels of achievement in the subject matter set out in the content standards and state how well students demonstrate their competency in a subject (U.S. Department of Education, 1994a). By following the basic academic standards set by the states or the national subject area standards, parents have a rich framework from which to develop challenging curriculum. Homeschooling resources and information on obtaining standards is provided in ERICEC Minibibliography EB18, which is part 2 of this digest.

International, national, and regional competitions may be valuable assessments of and incentives for achievement. Further, competitions may provide feedback as to how the student compares with others who are interested in the same area. Regional and national

competitions can be found in most fields, including math, science, computer programming, writing, engineering, geography, environmental, art, music, and dance. Specific examples are included in Homeschooling Resources (EB18). A selected list of competitions and activities can be obtained for a fee from the National Association of Secondary School Principals (NASSP).

### **HOW WELL DO HOMESCHOOLERS PERFORM?**

One way to compare homeschooled students with peers who attend public schools is to use standardized achievement test scores. A study of homeschooled student scores on standardized achievement tests shows higher scores than the general population (National Home Education Research Institute, 1997). Galloway (1995) investigated homeschooled graduates' potential for success in college by comparing their performance with students from conventional schools and found insignificant differences, except in the ACT English subtest scores. Homeschooled students earned higher scores in that subtest.

### **WHAT ABOUT COLLEGE?**

The later high school years should be structured with college applications in mind. These years may be managed in a variety of ways. Some students remain in homeschooling and receive no diploma. Others choose to reenter public school during high school to align themselves with peers and obtain a standard diploma. Others select a combination that will take advantage of Advanced Placement courses or other academic and extracurricular offerings.

Limited research suggests that the home educated do well in college (Sutton & de Oliveira, 1995; Galloway, & Sutton, 1995). Furthermore, homeschoolers may find the unique experiences and abilities gained through homeschooling make them attractive to competitive colleges. Check with the colleges of interest to determine if they have specific application requirements for homeschoolers. When standard high school student transcripts are not available, colleges may need other information to make an informed decision. SAT scores may be given more weight, since they are a way of comparing a homeschooler to the general college-bound population. Transcripts from community college courses taken during high school years can be useful. Letters of recommendation from persons who have worked with the homeschooler in tutorials, apprenticeships, community service, and social activities may prove very valuable. A detailed description of unique homeschool courses, in-depth independent projects, competitions, publications, and community service activities will help a college understand the quality of an applicant's homeschool education and recognize the student as a competitive applicant. An interview, when offered by a college or university, is particularly important for homeschool applicants.

### **WHERE CAN FAMILIES GET INFORMATION?**

This digest has an accompanying bibliography (EB18) that provides a wide variety of resources. The following resources and others cited in their bibliographies are another place to start. There are many parent discussion groups on the Internet that discuss homeschooling issues. Groups such as TAGFAM and TAG-L are listed on the ERIC EC website <http://www.cec.sped.org/gifted/gt-menu.htm>. Or, seek out a local homeschool support group. You can find one by checking with state organizations listed in some of the magazines and through some of the Internet sites listed in EB 18. Other sources include libraries; state



and local boards of education, especially state or local gifted advocacy groups; La Leche League; and religious organizations. Be sure to look for groups that match the underlying philosophy that attracted you to homeschooling.

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## **Learning Beyond the Local School: Distance Learning Programs for Academically Gifted Students**

By Dr. Paula Olszewski-Kubilius, Director,  
Center for Talent Development, Northwestern University

With the rapid advance in computer technology and access to the Internet, learning is no longer confined to traditional places such as classrooms, nor to typical delivery models such as face-to-face instruction. Distance learning is defined as any educational situation in which teacher and student are not engaged face-to-face (Imagine, Nov/Dec. 1995, p. 3). Two critical features of distance learning programs are:

1. They transcend the constraints of time and space.
2. They are student focused. The student chooses when, where, and how to learn.

There are many different forms that distance learning courses can take. These range from courses completed by mailing assignments to a teacher or mentor to courses in which students gather at a designated spot to view lectures on a television screen. Within the last decade, distance learning programs have become more computer-based, using e-mail and the Internet to connect students and teachers, or relying heavily on multi-media technology such as CD-ROMs. Some distance learning programs will afford students great freedom to study at times that suit them, be it early morning or in the middle of the night, and at their own individual pace. Others will require adhering to a fixed timetable of assignments and schedule of "class meetings." Because distance learning programs vary so widely, students may be able to choose courses that match their preferred learning styles (preference for group versus individual study, or preference for computer guided study or research versus more traditional forms).

Many gifted students are opting for distance learning courses because their school offerings are limited. Others want to get more courses in a particular area of interest or talent. But most middle- or high-school students who seek distance learning courses are accelerated in school and need early access to high school or college level work. Learning via the non-traditional methods involved in most distance learning situations requires some special characteristics of students:

- Students must be self-starters (Imagine, May/June, 1998, p 13). They must have the initiative to begin a course and the persistence to complete it. Generally, there will be no one looking over students' shoulders to insure that they are working on assignments in a timely fashion. Students who choose distance learning must be motivated enough to work on assignments alone, without prodding-consistently and persistently.
- Students must have the time (Imagine, May/June, 1998, p 13). There are many distance learning programs and courses now available to learners of all ages and abilities. Typically, students are using distance learning course to take "extra" courses. Families considering distance learning should, before signing up for any course, give serious consideration as to whether students will have enough time to work on course assignments on a regular basis.
- Students must be able to pay for the course (Imagine., May/June, 1998, p 13). Most distance learning programs cost between \$250 and \$500 Per course. Generally,

students cannot get refunds if, after registering for the course, they find they do not have time to complete it.

While there are many distance learning programs available to gifted students, not all are suitable for them given their learning capabilities and needs. However, any distance learning program, for learners of any age or ability, should have the following two features.

1. There should be an individual, mentor, or teacher that can help the student with the content of the course. The student should know who this individual is and should know how to contact him or her.
2. There should be an individual that the student or parent can contact to help with the technical aspects of the instructional delivery system, especially if the course uses computer technology. The student should know who this individual is and how to contact him or her.

In addition, families considering distance learning for their academically gifted students would want to inquire about the following:

1. Is the program accredited by some valid educational agency (The North Central Association of Colleges and Schools, for instance)?
2. Do the courses carry either high school or college credit?
3. Are the courses appropriate for academically talented students? That is, will the Advanced Algebra course have sufficient breadth and depth for a gifted learner? Can the teacher "tailor" the course via special assignments or other alterations of the curriculum for an academically talented student? Is the instructor willing to do this? Many distance learning programs which offer high school curricula are designed more for the learner who is either not succeeding in a typical high school setting or is unable to or chooses not to attend high school. It is important to determine whether these programs can meet the learning needs of academically talented learners for advanced content and in-depth coverage of course material.
4. Can students go at their own pace in completing the course? Are there any consequences, positive or negative, of finishing early?
5. If the course carries high school credit, will the student's high school accept it? Will the distance learning program issue a transcript documenting the course, grade, and credit? If the course carries college credit, can a transcript be sent to any college or university that the student applies to?

Students for whom transfer of credits is very important should make sure the program is itself accredited by a reputable educational agency and can offer credit for successfully completed courses. Families are well-advised to consult with the student's local school counselor or principal regarding how these credits will be handled (Will they go on the student's high school transcript? Will grades for distance learning course count in the computation of the student's GPA?). Students whose local high school will not recognize credits earned in a distance learning program should consider whether there are still sufficient good reasons to take the course. It may be worthwhile if it will give enrichment in a subject the student is very interested in. Many gifted students use distance learning programs to supplement and enrich their elementary and high school studies.

Some distance learning providers allow you complete an entire high school program, while others offer courses in only a limited area. A few were specifically designed for academically talented learners.

### **Independent/ Distance Study Programs**

The Center for Talent Development's **LetterLinks Program** is a correspondence program for academically talented students. The program provides two options for distance learning: the Center's LetterLinks courses in mathematics, social sciences, and the humanities for students in sixth through twelfth grade, and the LetterLinks/EPGY on-line math courses for students in kindergarten through twelfth grade, jointly offered by the Center for Talent Development and Stanford University's Education Program for Gifted Youth (EPGY). LetterLinks courses are designed for students whose local school offerings are limited or who wish to move quickly to advanced levels of course work. Course materials are sent and received via regular mail. A high school instructor is assigned to each individual student, serving as teacher and mentor. All work is corrected and evaluated by the teacher. The courses are taught at the level of a high school honors course and each course carries either one or two semesters of high school credit. Northwestern University's Center for Talent Development is accredited by the North Central Association of Colleges and Schools. Unless otherwise noted, score criteria for humanities, social sciences, and computer science courses are RSAT V 510, or ACT Read 24. Some courses also require a mathematics score or a combined SAT or ACT Composite score.

LetterLinks/EPGY on-line math courses use computer-based multimedia to provide students with audio lectures combined with text and graphics. EPGY courses are individualized so that fast learners can move through the mathematics sequence with little repetition, while slower learners will receive additional drill and practice. Textbooks and off-line assignments accompany online work. Instructors help students and parents by telephone and by email during afternoons, evenings and weekends. The program requires certain computer hardware and Internet access. Admission requirements for K-8 are 95% in math on any nationally normed standardized test. For Algebra and above, the minimum score criteria are RSAT-M 540 and RSAT-V 480 or ACT-M 19 and ACT Comp 21. For further information on these courses, phone (847) 491-3782, fax (847) 467-4283, or e-mail [ctd@nwu.edu](mailto:ctd@nwu.edu).

### **REFERENCES**

- "Education at a Distance", *Imagine*, May/June, 1998, pp 1515.  
"Accessing Distance Learning", *Imagine*, Nov/Dec. 1995, pp 58.

## Resources

### **Indiana Department of Education Support Services for Gifted/Talented & High Ability Education**

#### **DIVISION OF EXCEPTIONAL LEARNERS**

Under the provisions of the Indiana Code for High Ability Programs (IC 20-10.1-5.1-3) the Division of Exceptional Learners provides state resources using existing state resources to

- support school corporations in the development of local programs for high ability students
- enable educational opportunities that encourage high ability students to reach the highest possible level at every stage of the student's development
- provide state integrated services including
  - Information and materials resource centers
  - Professional development plans and programs
  - Research and development services
  - Technical assistance in student assessment, program assessment, and program development and implementation

#### **Contact Information & Staff**

Room 229 State House  
Indianapolis, IN 46204-2798  
Phone: 877/851-4106  
FAX: 317/232-0589

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Secretary  
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Email: [jvhale@doe.state.in.us](mailto:jvhale@doe.state.in.us)

## **SHARED INFORMATION SERVICES**

The Indiana Department of Education funds four libraries committed to gifted and talented education. These Shared Information Services (SIS) resource centers provides hoosiers with resources, materials, and information free of charge. Items can be checked out by visiting one of the centers, contacting them by phone or email, or ordering through the SIS online catalog at <<http://www.bsu.edu/teachers/services/sis/>>.

### **SIS Locations & Contact Information**

#### **Ball State University SIS**

State Manager: Rose Myers  
Coordinator: Becky Zimmerman  
Burris Laboratory School RM 120  
Muncie, IN 47306  
Phone: 765/285-8617 or 800/322-1248  
Fax: 765/285-3783  
Email: [sisbsu@bsuvc.bsu.edu](mailto:sisbsu@bsuvc.bsu.edu)

#### **Wilson Education Center SIS**

Coordinator: Teresa Endris  
11440 Highway 62  
Charlestown, IN 47111  
Phone: 812/256-8000 or 800/326-5467  
Fax: 812/256-8012  
Email: [sis@wesc.k12.in.us](mailto:sis@wesc.k12.in.us)

#### **Purdue University SIS**

Coordinator: Mary Tryon  
LAEB - Room 3244  
West Lafayette, IN 47907  
Phone: 765/494-1887 or 800/347-2948  
Fax: 765/494-4175  
Email: [sis@purdue.edu](mailto:sis@purdue.edu)

#### **Indianapolis Public Schools SIS**

Coordinator: Charlye Vance  
801 N. Carrollton Avenue  
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Phone: 317/226-4126 or 800-663-0770  
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## **EDUCATIONAL SERVICE CENTERS**

Indiana is divided into nine regions with an educational service center in each region. The centers are created by the State Board of Education to perform educational planning on a cooperative basis and to assist in meeting specific educational needs in participating school districts (511 IAC 4-4-1 through 7).

Planning committees comprised of area gifted/talented coordinators within the geographic boundaries of each center meet with center staff throughout the year to discuss potential activities and develop the grant proposal for the approaching school year. All interested personnel are invited to contact their respective service centers for additional information.

### **Region 1: Southern Indiana ESC**

Claudia Wheatley  
1102 Tree Lane Drive  
Jasper, IN 47546  
Phone: 812-482-6641  
FAX: 812-482-6652  
Email: [wheatley@siec.k12.in.us](mailto:wheatley@siec.k12.in.us)

### **Region 2: Wilson ESC**

Melissa Branham  
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FAX: 812/256-8012  
Email: [mbranhm@wesc.k12.in.us](mailto:mbranhm@wesc.k12.in.us)

### **Region 3: West Central ESC**

Valerie Buchanan  
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FAX: 765/653-7897  
Email: [vbuchana@wciesc.k12.in.us](mailto:vbuchana@wciesc.k12.in.us)

### **Region 4: East Central ESC**

Gay Worth  
1601 Indiana Avenue  
Connersville, IN 47331  
Phone: 800/669-3010 or 765/825-1247  
FAX: 765/825-2532  
Email: [gworth@ecesc.k12.in.us](mailto:gworth@ecesc.k12.in.us)

### **Region 5: Wabash Valley ESC**

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FAX: 765/463-1580  
Email: [jbr@wvec.k12.in.us](mailto:jbr@wvec.k12.in.us)

### **Region 6: Northwest Indiana ESC**

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### **Region 7: Northern Indiana ESC**

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### **Region 8: Region 8 ESC**

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FAX: 219/758-3142  
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### **Region 9: Central Indiana ESC**

Debbie Fish  
6321 LaPas Trail  
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Phone: 317/387-7100  
FAX: 317/328-7298

## **GIFTED/TALENTED COORDINATORS COUNCIL**

The Coordinators Council, established by the Indiana Department of Education in 2000, collaborates with the Division of Exceptional Learners to plan and develop resources for high ability programs and services. One school corporation gifted/talented coordinator from each region serves on the Coordinators Council as does one education service center professional development coordinator.

### **Region 1: Southern Indiana ESC**

Martha Nice  
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Email: [mnice@kiva.net](mailto:mnice@kiva.net)

### **Region 2: Wilson ESC**

Linda Ray  
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### **Region 3: West Central ESC**

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### **Region 4: East Central ESC**

Shirley Hall  
Phone: 765/468-7725  
Email: [shirleyh@monroe.k12.in.us](mailto:shirleyh@monroe.k12.in.us)

### **Region 5: Wabash Valley ESC**

Jo Anne Spitznagle  
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### **Region 6: Northwestern Indiana ESC**

Pat Carnahan  
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### **Region 7: Northern Indiana ESC**

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### **Region 8: Region 8 ESC**

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### **Region 9: Central Indiana ESC**

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## **Indiana Academy for Science, Mathematics, and Humanities**

Founded in 1988 by the [Indiana General Assembly](#), the Indiana Academy for Science, Mathematics, and Humanities has two purposes that are central to its mission. First, the Indiana Academy serves as a residential high school for approximately 300 gifted and talented juniors and seniors from across the state of Indiana. Second, through various Outreach programs, the Indiana Academy strives to stimulate and enable vitality in educational programs for academically gifted students and teachers.

The Indiana Academy is located on the [Ball State University](#) campus and is accredited by the [Indiana Department of Education](#) and by the North Central Association of Schools and Colleges through the University Schools. It is a member of the National Association of



College Admission Counseling and complies with the NACAC "Statement of Principles of Good Practice."

The Academy has been nationally recognized as a premier educational institution for gifted and talented students.

### **Academics**

The academic curriculum of the Indiana Academy is multi-faceted, with the dimensions comprised of a Core Program, an Exploratory Program, and an Extended Program. The "Core Program" consists of subject requirements from science, mathematics, humanities, and interdisciplinary courses. The "Exploratory Program" promotes individual exploration through independent research, colloquia, apprenticeships, Academy elective courses, and University elective courses. The "Extended Program" utilizes the total Academy environment to educate the "whole" student through programs in leadership, wellness, community/Academy service, and cultural events.

May Term is a two-week program that occurs at the conclusion of second semester. It provides students an opportunity to take an intensive course or workshop in an academic area that is not normally offered in the secondary-school curriculum. All courses offered at the Indiana Academy are either Honors, Advanced Placement (AP), or are part of the Ball State University curriculum.

### **The Purpose**

The Indiana Academy for Science, Mathematics, and Humanities has two purposes which are central to its institutional mission. First, the academy provides a physical, intellectual, and social environment in which students with exceptional academic ability can thrive in an appropriately exceptional learning community.

Second, the Academy serves Indiana as a state-wide center for gifted education so that pupils all across the state can have access to the programs and resources appropriate to their abilities. Through the latest advances in interactive telecommunications technology, the development and dissemination of innovative curricula, applied research in gifted education, and in-service education of teachers, the Indiana Academy strives to stimulate vitality in educational programs for academically gifted secondary pupils and their teachers.

### **The Curriculum**

The curriculum of the Indiana Academy for Science, Mathematics, and Humanities is designed to enable its students to understand the past, investigate the present, and plan the future. Traditional liberal arts and sciences are emphasized in required course work, and individual inquiry and discovery are stressed through elective studies, independent study, and research and practical experience. The resulting harmony of rigor, challenge, and inspiration in the study of our scientific and cultural heritage, combined with the freedom to explore new horizons of knowledge, produces an intellectual environment in which Indiana Academy students learn to think creatively, communicate clearly, and act responsibly in an increasingly complex global society.

The methods and materials for instruction are selected for the promise they show in both exciting the imagination and disciplining the mind. Tradition is blended with innovation. Lectures and discussions in both advanced level Indiana Academy courses and university level courses are combined with seminars, colloquia, independent study and research, and apprenticeships with researchers and practitioners in various professions.

### **Admissions**

Admission to the Indiana Academy is selective and based upon previous academic records, personal interviews, teacher recommendations, and standardized testing. Approximately 180 students are admitted to the two-year program each fall. Prospective students and parents are encouraged to visit the Academy and should anticipate spending three to four hours on campus. Daily tours are conducted by students between 9 a.m. and 3 p.m. Also, there are occasional [Academy Preview Days](#) that offer a more extensive introduction to the Indiana Academy and its facilities and resources.

### **Graduation Guidelines**

A total of 47 credits are required for graduation, of which 27 must be completed at the Indiana Academy. In addition, students must complete 50 hours of approved community service and an Academy service program. Grade point average and class rank are not calculated, because the relative measure of academic success in all of the Academy's courses would inaccurately describe a student's actual achievement. The Academy has a 99 percent college matriculation rate, and most students are admitted to their first college choice. Each year, Academy graduates are offered more than \$1 million in scholarships. Extensive college placement opportunities are available through the Academy's College Counseling Center.

### **Extracurricular Activities**

Student activities include: Indiana High School Athletic Association interscholastic and intramural athletics; a variety of special interest groups, from the Environmental Club and the Solar Car Team to the Sign Language Club and Black Students for Unity; an award-winning newspaper and yearbook; a variety of bands, including jazz and orchestra; numerous community organizations, from SADD to 4-H to Young Life; and Student Parliament. Cultural and recreational opportunities abound on the Ball State University campus and are woven into the daily and weekend activities of the Academy community.

### **Outreach**

The Indiana Academy Office of Outreach Programs provides teachers and students throughout the nation many opportunities for educational enrichment. This fulfills one of the Academy's two main goals: First, to provide a physical, intellectual, and social environment in which students with exceptional ability can thrive in an appropriately exceptional learning environment. Second, to serve Indiana (and the United States) as a center for gifted education so that pupils can have access to the programs and resources appropriate to their abilities.

Through the latest advances in interactive telecommunications technology, the development and dissemination of innovative curricula, applied research in gifted education, and in-

service education of teachers, the Indiana Academy and its Office of Outreach Programs strive to stimulate vitality in educational programs for elementary and secondary pupils and their teachers. There are three main vehicles the Outreach Office uses to achieve this goal: Distance Learning courses, the Outstanding Educator Fellowship Program, and monthly and summer workshops.

[Summer workshops](#) allow teachers from throughout Indiana and across the United States to come to Ball State University's campus and participate in an extensive series of enrichment seminars focused on many educational fields. The one-day conferences are targeted at specific study topics, while the summer workshops are four-day, small-group seminars dedicated to in-depth exploration of various educational topics.

[The Outstanding Educator Fellowship Program](#) provides a handful of exemplary Indiana state public school teachers with an opportunity to leave their home school for an academic year and join the Indiana Academy teaching faculty. For an entire year, each selected teacher is designated as an Outstanding Educator Fellow and is immersed in the exhilarating but rigorous teaching experience of the Academy.

For more information on the Indiana Academy's Distance Learning programming, please go to the new Insite Web hub at <http://www.bsu.edu/insite/>

## **The Center for Talent Development and The Midwest Talent Search**

The Center for Talent Development of [Northwestern University](#) serves academically talented students, their families, teachers, and counselors. Services include programs that identify and publicly recognize talented students; educational programs; a program of research on the psychology, sociology, and education of gifted and talented learners; publications for and about academically talented students; academic counseling services and materials for students and parents; training programs for educators; programs to aid academically talented economically disadvantaged students; and seminars for parents.

The Center's work is premised on the following beliefs:

- Productive achievement in children and adults is a result of cognitive factors, personality attributes, and environmental influences.
- Identification is the crucial first step in the development of talent.
- Talent identification efforts should seek individuals who have potential and are "at promise" to achieve, as well as individuals with realized or developed talent.
- Multiple social contexts such as home, school, workplace and neighborhoods influence talent development.
- Talent development is a process of understanding, providing, supplementing, and managing social support systems that enhance the development of talents and the development of the individual.
- Academically talented individuals exist in every racial and ethnic group.
- Gifted education is vital education - education that stimulates, excites, gives life, challenges, provokes, and inspires.
- Education programs for academically talented students should encourage students to set high goals and meet them, stimulate students' passion for learning, their quest for a vocation, and the development of a philosophy of life.

An objective of the Center for Talent Development is to create models of education that specifically address the learning and social-emotional needs of academically talented children who come from a variety of economic and social circumstances. The Center conducts research about the effectiveness of these models and their transferability to other situations and students, and disseminates findings to appropriate audiences. The Center also seeks to provide expert information to parents that will assist them with the development of their children. Finally, the Center, through its practice and research, seeks to understand the process of talent development and the development of talented individuals.

Now in its fifteenth year, the Center for Talent Development has evolved from a single focus on talent identification and recognition to a multi-faceted operation with four central foci: talent identification; talent development; research; advocacy.

### **Talent Identification**

The foundation of the Center's work, the Midwest Talent Search (MTS) and its companion search, Midwest Talent Search for Young Students (MTSY), is one of four regional talent searches in the United States. The talent searches use out-of-level tests to identify academically talented students in grades five through eight.

Our talent searches identify students whose abilities may not be recognized fully by their schools, and provide them with information and access to resources that enable them to develop their talents, set appropriate educational and career goals, and define academic paths.

The Midwest Talent Search is based on the premise that early and accurate assessment of students showing evidence of advanced academic abilities or achievement through out-of-level testing can be useful in designing and obtaining more appropriate academic programs for them.

MTS seeks to give sixth, seventh, and eighth grade students (ninth grade ACT test-takers) a more accurate picture of their mathematical and verbal reasoning abilities. Armed with this information, students and parents can reap the benefits of specialized curricula, enrichment programs and even accelerated courses of study.

Since 1981, the Center for Talent Development (CTD) has provided educational enrichment opportunities for more than 337,000 students through its MTS, Saturday, Summer and Correspondence programs. CTD conducts MTS annually along with three other university centers that test over 150,000 students each year.

### **Talent Development**

Our programs seek to provide supports to students to enhance their talent development. Specifically, our academic programs:

- provide learning experiences matched to students' identified abilities
- inspire in students a love of learning and a desire for self-development
- provide a community of intellectual peers who value scholarship, academic achievement, and creativity
- promote the development of autonomous, disciplined approaches to learning

CTD currently has a number of talent development programs targeted to students of different ages, abilities, and circumstances. These include:

- [The Letter Links Learning \(LLL\) Program](#), a program of correspondence courses for students in grades 6-12;
- [The Saturday Enrichment Program \(SEP\)](#) for students in preschool through grade 9;
- The [Spectrum](#) Summer Program for Academically Talented 7<sup>th</sup> – 9<sup>th</sup> Graders, the [Apogee](#) summer program, for talented 4<sup>th</sup>-6<sup>th</sup> graders, and the [Equinox](#) summer program for 10<sup>th</sup> - 12<sup>th</sup> graders;
- Weekend [parent-student conferences](#) that include talks by experts on a wide range of issues related to the development of talent in young people.

### **Research**

The Center conducts studies and prepares reports in areas directly related to its services and as part of funded projects. Recent studies have investigated the short and long term effects of career and college counseling programs on students, the relationship between SAT scores and family and student background characteristics, the effects of summer programs on

students' self-concept, the articulation between local school programs and extra-educational experiences for gifted students, and the effects of family values and characteristics on talent development. The research of the Center is an integral part of its program model development activities.

### **Advocacy**

The Center is concerned not only with identifying and providing direct services for talented students, but also with positively affecting educational policy and educating the public about gifted and talented learners. Through our development and advocacy efforts we: inform parents, teachers and school personnel about the characteristics and needs of talented learners; encourage them to meet these needs; and provide them with the tools to do this. We accomplish this through publications, seminars, classes, presentations, manuals, program materials, and the efforts of our MTS state liaisons and advisory board members. Our magazine, *Talent Development*, is our major means of bringing information about the Center and services and programs for gifted students to the public.

For more information, visit the website at [www.ctd.northwestern.edu](http://www.ctd.northwestern.edu).

## **USA Mathematical Talent Search**

1492! 1776 mod 2001 = ? Intrigued?

This is the type of problem that appears on the USA Mathematical Talent Search (USAMTS) website in a FREE mathematics competition open to all U.S. high school students. USAMTS is unique in that students have a full month to work out their solutions and work on these problems can provide a challenging, enriching mathematics experience outside the classroom. Carefully written justifications are required for each problem. Problems range in difficulty from being within the reach of most high school students to challenging the best students in the country.

Each academic year the USAMTS consists of four rounds (Oct., Nov., Jan., & March), each round featuring five problems. Student solutions to the problems are graded by mathematicians and comments are returned to the students. The problems are published on the USAMTS website (as is the entry form) at [www.nsa.gov/programs/mepp/usamts.html](http://www.nsa.gov/programs/mepp/usamts.html)

Students may use any materials—books, calculators, computers—but all the work must be their own. The USAMTS is sponsored by the National Security Agency, the largest employer of mathematicians in the U.S. With permission, USAMTS participants' names and addresses are provided to colleges, universities, and employers for recruitment purposes; it is also one way to enter the process of selection for the USA Mathematical Olympiad team.

The USAMTS was initiated in 1989 under the joint sponsorship of the Rose-Hulman Institute of Technology and the Consortium for Mathematics and Its Applications modeled after a year-round creative mathematical problem-solving program first initiated in Hungary in 1894. NSA's involvement with the USAMTS program began in 1992.

P.S. The answer is 1335.

## Other Basic Resources for G/T Teachers and Parents

This list contains a few of the most useful and basic resources for understanding gifted children and for developing effective instruction for gifted learners.

### Books

- Alvino, James. (1995). *Considerations and Strategies for Parenting the Gifted Child*. Storrs, CT: NRC/GT, University of Connecticut.
- Baum, S. M., Owen, S. V., & Dixon, J. (1991). *To Be Gifted & Learning Disabled*. Mansfield Center, CT: Creative Learning Press.
- \*Colangelo, Nicholas & Davis, Gary A. (Eds.). (1991). *Handbook of Gifted Education*. Needham Heights, MA: Allyn and Bacon.
- \*Coleman, Laurence J. and Cross, Tracy L. (2000). *Being Gifted in School: An Introduction to Development, Guidance, and Teaching*. Waco, TX: Prufrock Press.
- Cross, Tracy L. (2000). *On the Social and Emotional Lives of Gifted Children*. Waco, TX: Prufrock Press.
- Curry, James & Samara, John. (1991). *Curriculum Guide for the Education of Gifted High School Students*. Texas Association for the Gifted and Talented.
- Galbraith, Judy & Delisle, Jim. *The Gifted Kids' Survival Guides*. Minneapolis, MN: Free Spirit.
- \*Gallagher, James J. & Gallagher, Shelagh A. (1994). *Teaching the Gifted Child, Fourth Edition*. Needham Heights, MA: Allyn and Bacon.
- Landrum, Mary S., Callahan, Carolyn M., & Shaklee, Beverly D. (2000). *Aiming for Excellence: Annotations to the NAGC Pre-K – Grade 12 Gifted Program Standards*. National Association for Gifted Children and Prufrock Press.
- Piirto, Jane. (1998). *Understanding Those Who Create, 2<sup>nd</sup> Edition*. Scottsdale, AZ: Great Potential Press, Inc.
- Reis, Sally; Burns, Deborah; Renzulli, Joseph. *Curriculum Compacting: The Complete Guide to Modifying the Regular Curriculum for High Ability Students*. Waco, TX: Prufrock Press.
- Rimm, Sylvia. (1996). *Dr. Sylvia Rimm's Smart Parenting: How to Raise a Happy, Achieving Child*. New York: Crown Publishing.
- Rogers, Karen. (2001). *Re-Forming Gifted Education: Matching the Program to the Child*. Scottsdale, AZ: Great Potential Press, Inc.
- Samara, John & Curry, James. (1990). *Writing Units That Challenge: A Guidebook For and By Educators*. Maine Educators of the Gifted and Talented.
- Samara, John, Pedraza, Carlos, & Curry, James. (1992). *Designing Effective Middle School Units*. Sponsored by Illinois Association for Gifted Children, P.O. Box 2451; Glenview, IL 60025.
- \*Shore, Bruce; Cornell, Dewey; Robinson, Ann; Ward, Virgil. (1991). *Recommended Practices in Gifted Education: A Critical Analysis*. New York: Teachers' College Press.
- \*Silverman, Linda (Ed.). (1993). *Counseling the Gifted and Talented*. Denver: Love Publishing.
- Steele, Kathy. (1996). *Involving Parents in Schools*. Beavercreek, OH: Pieces of Learning. 1-800-729-5137.

- Sternberg, R. & Davidson, J. (Eds.). (1986). *Conceptions of Giftedness*. New York: Cambridge University Press.
- \*VanTassel-Baska, Joyce. (Ed.). (1994). *Comprehensive Curriculum for Gifted Learners, 2nd edition*. Boston: Allyn and Bacon.
- \*VanTassel-Baska, Joyce, et al. (1998). *Excellence in Educating Gifted & Talented Learners, 3rd edition*. Denver: Love Publishing.
- Winner, Karen. (1996). *Gifted Children: Myths and Realities*. Basic Books – Harper Collins Publishers, Inc.

\*These books should be in the most basic library concerning meeting the needs of gifted and talented learners. There are many other fine books in the field of gifted education; the above list is not meant to be comprehensive. They may also be checked out from one of the four state funded Shared Information Services lending libraries. Contact the Ball State SIS for more information (800/322-1248).

### **Professional Organizations for Gifted Children**

- American Association for Gifted Children. Duke University, 1121 West Main, Suite 100, Durham, NC 27701. Telephone: 919-683-1400.
- California Association for the Gifted. 5777 W. Century Blvd., Suite 1670, Los Angeles, CA 90045. 310-215-1898. [www.CAGifted.org](http://www.CAGifted.org).
- Center for Talent Development and the Midwest Talent Search. Northwestern University, 617 Dartmouth Place, Evanston, IL 60208-4175. Telephone: 847-491-3782.
- Indiana Association for the Gifted. P.O. Box 641, Carmel, IN 46082. Telephone and fax: 317-705-1660. email: [iagdirect@iquest.net](mailto:iagdirect@iquest.net). Website: [www.iag-online.org](http://www.iag-online.org)
- National Association for Gifted Children. 1707 L Street NW, Suite 550. Washington, D.C. 20036. Telephone: 202-785-4268. This is the national organization with which IAG is affiliated.
- The Association for the Gifted (TAG) of the Council for Exceptional Children. 1920 Association Drive, Reston, VA, 22091. Telephone: 1-800-336-3278.

### **Periodicals**

- Gifted Child Quarterly*. Journal of the National Association for Gifted Children. 1707 L Street NW, Suite 550, Washington, D.C. 20036. Telephone: 202-785-4268.
- Gifted Child Today*. P.O. Box 8813, Waco, TX 76714-8813.
- Gifted Education Communicator*. California Association for the Gifted. 5777 W. Century Blvd., Suite 1670, Los Angeles, CA 90045. 310-215-1898. [www.CAGifted.org](http://www.CAGifted.org).
- Journal for the Education of the Gifted*. Publication vehicle for the Association for the Gifted. University of North Carolina Press, P.O. Box 2288, Chapel Hill, NC 27515-2288.
- Journal of Secondary Gifted Education*. P.O. Box 8813, Waco, TX 76714-8813.
- IMAGES*. Published four times per year by the Indiana Association for the Gifted. It contains articles of interest to parents and teachers about gifted children and their education. It also contains information about programs, conferences, speakers, and legislation affecting gifted children in Indiana.



*IMAGINE* Opportunities and Resources for Academically Talented Youth. IAAY, Johns Hopkins University. P.O.Box 3073, Langhorne, PA 19047. Telephone: (215) 826-0707.

*Our Gifted Children*. Royal Fireworks Press. P.O.Box 399, First Avenue, Unionville, NY 10988. Telephone: 914-726-4444.

*Parenting for High Potential*. Published by the National Association for Gifted Children. 1707 L Street NW, Suite 550. Washington, D.C. 20036. Telephone: 202-785-4268.

*Roeper Review*. Roeper City and County Schools. P.O. Box 329, Bloomfield Hills, MI 48303-0329. Telephone: 313-642-1500.

*Understanding Our Gifted*. Open Space Communications, Inc. P.O. Box 18628, Boulder, CO.

### **Publishers of Gifted Education Materials**

- California Association for the Gifted. 5777 W. Century Blvd., Suite 1670, Los Angeles, CA 90045. 310-215-1898. [www.CAGifted.org](http://www.CAGifted.org).
- Free Spirit Publishing. 217 Fifth Avenue North, Suite 200, Minneapolis, MN 55401-1299. 800-735-7323 [www.freespirit.com](http://www.freespirit.com)
- Great Potential Press. (formerly Gifted Psychology Press) P.O. Box 5057, Scottsdale, AZ 85261. 602-954-4200. [www.giftedbooks.com](http://www.giftedbooks.com)
- National Association for Gifted Children. 1707 L Street, NW, Suite 550, Washington, D.C. 20036. 202-785-4268. [www.nagc.org](http://www.nagc.org).
- Prufrock Press. P.O. Box 8813, Waco, TX. 800-998-2208. [www.prufrock.com](http://www.prufrock.com)
- Royal Fireworks Publishing. 1 First Ave. P.O.Box 399, Unionville, NY 10988-0399. 914-726-4444. email: [rfpress@frontiernet.net](mailto:rfpress@frontiernet.net)

### **Selected Information on Student Competitions/ Programs**

#### **Websites**

- Science Competitions, Grades K-12: [www.nsta.org](http://www.nsta.org)
- Math Contests (local and national)
  - Grades 6-8: <http://mathcounts.org>
  - Junior High & High School: [www.unl.edu/amc/](http://www.unl.edu/amc/)

#### **Publications**

- Pendleton, Scott. (1997). *The Ultimate Guide to Student Contests*. New York: Walker and Company
- National Science Foundation. *Directory of NSF-Supported Young Scholars Projects*. Write: NSF Forms & Publications Unit, 4201 Wilson Blvd., Arlington, VA 22230

### **Selected Distance-Learning Opportunities**

- <http://epgy.stanford.edu>
- [www.ctd.nwu.edu](http://www.ctd.nwu.edu)
- [www.jhu.edu/gifted/cde](http://www.jhu.edu/gifted/cde)
- [www.academy.bsu.edu/outreach](http://www.academy.bsu.edu/outreach)
- [www.tip.duke.edu](http://www.tip.duke.edu)
- [www.parktutor.pvt.k12.in.us/distancelearning/](http://www.parktutor.pvt.k12.in.us/distancelearning/)

- [www.merlynspen.com](http://www.merlynspen.com)
- [psude@cde.psu.edu](mailto:psude@cde.psu.edu)
- [www.unl.edu/conted/disted/index.html](http://www.unl.edu/conted/disted/index.html)
- [ILEARN@ADMIN.UWEX.EDU](mailto:ILEARN@ADMIN.UWEX.EDU)

### **On-Campus College Classes for Gifted High School Students**

[www.universitycollege.iupui.edu/SPAN](http://www.universitycollege.iupui.edu/SPAN) or write: IUPUI Honors Program, SPAN Division, UC 3140, 815 W. Michigan St., Indianapolis, IN 46202

### **Programs for Development and Recognition of Academic Talent**

#### **MIDWEST TALENT SEARCH**

Center for Talent Development, Northwestern University, 617 Dartmouth Place, Evanston, Illinois 60208-4175; (847) 491-3782; <http://www.ctd.nwu.edu>

A program which enables elementary or middle school students to take the SAT/ACT exams to better assess their level of academic ability which can be a basis for better course selection, planning for college and participation in accelerated summer programs across the country.

#### **REGIONAL SUMMER PROGRAMS**

- Summer Residential Programs, Purdue University Gifted Ed. Resource Institute, 1446 LAEB, Rm. 5114, West Lafayette, IN 47907 [www.soe.purdue.edu/geri](http://www.soe.purdue.edu/geri)
- The Summer Institute for the Gifted, College Gifted Programs, 120 Littleton Rd., Suite 201, Parsippany, NJ 07054-1803
- Office of Summer Programs (Prairie Scholars), MacMurray College, 447 E. College Ave., Jacksonville, IL 62650 [www.mac.edu/gifted](http://www.mac.edu/gifted)
- Belin-Blank Center for Gifted Ed. & Talent Development, The University of Iowa, 210 Lindquist Center, Iowa City, IA 52242 [www.uiowa.edu/~belinctr](http://www.uiowa.edu/~belinctr)
- Summer Program for Verbally & Mathematically Precocious Youth (VAMPY), The Center for Gifted Studies, Western Kentucky University, One Big Red Way, Bowling Green, KY 42101-3576
- Office of Pre-College Programs, Wright State University, 3640 Colonel Glenn Hwy., Dayton, Ohio 45435

#### **REGIONAL TALENT SEARCH & SUMMER PROGRAMS**

- Duke University TIP, Box 90747, Durham, NC 27708-0747 [www.tip.duke.edu](http://www.tip.duke.edu)
- IAAY Academic Summer Programs, The Johns Hopkins University, Baltimore, Maryland 21218; [www.jhu.edu/~gifted/programs.html](http://www.jhu.edu/~gifted/programs.html)
- Rocky Mountain Summer Institute, Rocky Mountain Talent Search - University of Denver, Wesley Hall, Rm. 203, 2135 E. Wesley Ave., Denver, CO 80208; [www.du.edu/education/ces/si.html](http://www.du.edu/education/ces/si.html)

Additional listings of summer program opportunities available on the IAG website: [www.iag-online.org](http://www.iag-online.org).

**Selected Book Titles for Programs for Students**

- *Summer on Campus: College Experiences for High School Students* (1995); available in bookstores or from Dept. A40123, College Board Publications, Box 886, New York, NY 10101-0886
- *Summer Opportunities for Kids and Teenagers* (1998); available in bookstores or from Peterson's Guides, P.O. Box 2123, Princeton, NH 08543-2123
- *Program Opportunities for Academically Talented Students* (1996); IAAY Office of Public Information, The Johns Hopkins University, 3400 N. Charles St., Baltimore, MD 21218
- *Educational Opportunity Guide: A Directory of Programs for the Gifted* (1999); Duke University TIP, 1121 W. Main St., Suite 100, Durham, NC 27708-0780

## **Professional Development Opportunities at University Centers**

By Cheryl M. Adams

Indiana is most fortunate to have a wealth of professional development opportunities from national experts in the field of gifted education, especially at the university level. Three university centers for gifted education responded to my request for information about professional development. Each center's offerings are presented below. For more information, please contact the individual centers.

### **Ball State University Center for Gifted Studies and Talent Development**

The Center for Gifted Studies and Talent Development at Ball State University is recognized nationally as one of the major centers for gifted education. Fourteen faculty with backgrounds in gifted education provide professional development regionally, statewide, and nationally. Our faculty include those who have been honored by the field of gifted education such as NAGC Early Scholar, NAGC Early Leader, NAGC Outstanding Doctoral Students, NAGC Board member, IAG Board Members and Executive Committee members and CEC TAG Board President. We have current and former editors of *JSGE*, *GCQ*, *Roeper Review*, *The Teacher Educator*, and *Research Briefs*, as well as those who have guest edited these journals. The Center currently administers a Jacob K. Javits Gifted and Talented Students Programming Grant that provides professional development in mathematics and science to teachers in the Indianapolis Public Schools. The Center also sponsors the Share-IN conference each fall and the Gifted Girls Conference every other year.

The personnel at the Center provide professional development in a variety of areas including differentiated instruction, parenting gifted children, social and emotional needs of gifted students, identification of gifted students, programming, program evaluation, assessment in general as well as assessment of gifted students, curriculum development and assessment, gifted females, twice exceptional students, strategies for classroom teachers and specific content area differentiation.

The Center supports the endorsement in gifted education through distance learning and on-site, one class each semester. A new cohort begins fall semester with the first endorsement class. Endorsement classes also are offered in a two-week intensive workshop format in the summer. Classes begin in mid June and change at two-week intervals. The entire endorsement can be taken during the summer. The course in critical and creative thinking, one of the two electives offered in the endorsement, can be taken directly through the Internet. To comply with the standards adopted by the Indiana Professional Standards Board in June of 2001, we have re-aligned our courses in gifted education with the Council for Exceptional Children's Performance –Based Standards for Gifts/Talents. These are the benchmarks by which requirements for licensure will be measured. These standards delineate what teachers must know and be able to do to receive licensure for teaching gifted learners. The endorsement/licensure program at BSU will continue to be a 15 credit hour program.

### **Gifted and Talented Endorsement Program at Indiana University**

The School of Education at Indiana University in Bloomington offers a unique, integrated, 15-hour gifted and talented academic and art endorsement program for K-12 teachers, administrators, graduate students and counselors. Five courses are required over two summers and are applicable for an Indiana Endorsement in Gifted and Talented Education. Courses may be taken without enrollment in the endorsement program. Faculty are Dr. Janice Bizzari, Dr. Gilbert Clark, Dr. Enid Zimmerman, and Donna Berens-Kinhead. Dr. Bizzari is principal at University Elementary School, Bloomington, Indiana, and past coordinator of Gifted Programs for Monroe County Community Schools. Dr. Clark is Professor Emeritus of Art Education and Gifted and Talented Education at Indiana University. Dr. Zimmerman is professor and coordinator of Art Education and Gifted and Talented Education at Indiana University. Ms Berens-Kinhead is a master teacher in the Accelerated Learning Program for Monroe County Community Schools.

All courses in the Gifted and Talented Endorsement Program at Indiana University are offered for three credits and meet from 9 a.m. to 4 p.m. daily for five days during June or July at Indiana University and University Elementary School. Participants can take courses that meet concurrently in either the Artistically Talented Program or the Gifted and Talented Academic Program. The following courses are included in the Gifted and Talented Endorsement Program: Education and Psychology of the Gifted and Talented; Curriculum for Gifted and Talented or Curriculum for Artistically Talented Students; Methods and Materials for the Gifted and Talented or Advanced Methods and Materials for Artistically Talented Students; and Practicum: Gifted and Talented or Art Education Practicum with Artistically Talented Students; and Arts for Exceptional Children: Gifted

### **Purdue University Gifted Education Resource Institute**

The Gifted Education Resource Institute (GERI) at Purdue University was founded over 25 years ago by Dr. John Feldhusen, one of the pioneers of gifted education. The Institute is internationally recognized as one of the foremost centers for training in gifted education. GERI offers numerous professional development experiences for persons who are interested in gifted education, creativity, and talent development. Purdue's offerings include degree programs, licensure programs, and pre-service teacher education.

Degree programs through GERI are a terminal Masters program for teachers that can be completed on a part-time basis, and a combined thesis Masters/Ph.D. program for individuals who want to conduct research and/or teach at the university level. GERI's graduate programs are based in educational psychology under the direction of Dr. Sidney M. Moon and twenty-one associated faculty who have expertise in other disciplines such as math education, science education, art education, family studies, counseling, and students with disabilities. Hallmarks of our graduate programs are individualization, interdisciplinary study, and a variety of opportunities for hands-on experiences in research, teaching, counseling, and/or enrichment program administration.

Purdue's licensure program is new. For many years, GERI has provided coursework leading to an endorsement in gifted education. Purdue's School of Education is in the process of

converting the existing endorsement program to a licensure program under the new standards-based framework for gifted and talented education adopted by the Indiana Professional Standards Board in June, 2001. GERI expects to begin offering a licensure program in gifted education in 2002. The proposed 15 credit graduate licensure program is performance-based. Students will be required to develop a cumulative portfolio of their work in the program to demonstrate competency on national standards for teachers of gifted education. The licensure program will consist of three core required courses (Gifted, Creative, and Talented Children; Identification and Evaluation in Gifted Education; and Curriculum and Program Development in Gifted Education), an elective, and a practicum. The core courses will be offered two formats: two-week long intensive summer classes on the West Lafayette campus and off-site courses at regional sites during the academic year through Purdue's continuing education campus. The practicum will be offered as a supervised distance learning course, enabling teachers to complete it in conjunction with their regular teaching assignment. The coordinators and instructors for the new licensure program are Dr. Sidney Moon, Professor of Gifted Education at Purdue University and Director of the Gifted Education Resource Institute, and Dr. Vicki Vaughn, Principal, Edgelea Elementary School, Lafayette School Corporation.

Visit GERI's website (<http://www.geri.soe.purdue.edu>) for more information about the programs and professional development opportunities offered through GERI.

#### **Contact Information for University Gifted/Talented Programs**

##### **Ball State University**

Dr. Cheryll Adams

Director, Center for Gifted Studies & Talent Development

E-mail: [cadams@bsu.edu](mailto:cadams@bsu.edu).

Phone: 765/285-5390 800/842-4251 (Indiana only)

##### **Indiana University**

Dr. Janice Bizzari, University School

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## Glossary of Terms

The following glossary was constructed by modifying and adding to a similar glossary published by the California Association for the Gifted. The Glossary appeared in their publication: *The Challenge of Raising Your Gifted Child (1998)*. Each term is followed by the implications of the term as seen by The Indiana Association for the Gifted. The glossary has also been modified to be consistent with the definition of terms as used by the Indiana Department of Education, Division of Exceptional Learners.

This glossary has been designed to present information in this way:

<b>Term</b>	Word or phrase
<b>Definition</b>	The accepted meaning of the term as it relates to both general and gifted education
<b>Implications</b>	The issues, concerns, and considerations of the term as it is applied specifically to gifted students and gifted education

**Ability Grouping** Grouping students by ability or readiness level. Groups can be formed and reformed to meet varied instructional purposes. It is not synonymous with "tracking."

*LAG advocates the flexible grouping of gifted students. They need to be in groups with other gifted students for some part of their educational program. Ability grouping may take many forms beneficial to gifted learners. (See also Heterogeneous/Homogeneous Grouping and Tracking.)*

**Academic Excellence** Expecting each student to work at maximum level toward a set of external standards as defined by state, district, and/or school. Learning and performing for each student should be at a challenge level commensurate with each student's skills and developed abilities.

*The standards of excellence and appropriate challenge for gifted learners should be defined by their abilities and needs, as well as the expectations held for them by experts in various fields, educators, parents, and the community.*

**Accelerated Learning** Pacing students through the curriculum at a rate faster than normal and commensurate with their advanced ability. Students may or may not be formally identified as high ability to participate in some forms of accelerated learning.

*LAG supports the use of full- or part-time acceleration as some effective methods to meet the needs of gifted learners. Grade skipping, subject skipping, and compacting the curriculum by eliminating content the student has already mastered are examples of acceleration that allow for expansion of curriculum for gifted students in a non-traditional pattern.*

**Achievement Test** A test, generally standardized, that measures the extent to which a student has mastered the skills and knowledge of a particular area as measured by that test

**Advanced Placement** Any of 33 classes endorsed by the College board in which in which a secondary student can earn college credit by successfully meeting criteria established by higher education institutions on a nationally given and scored Advanced Placement exam. Students also earn high school credit upon successful completion of the course(s).

*IAG supports Advanced Placement opportunities as one method to meet the needs of gifted and other able learners.*

**Affective Learning** Incorporating into the curriculum opportunities for students to address values, attitudes, and appreciations of self and others.

*IAG supports the development of the whole child. In addition to academic opportunities, guidance services by a counselor trained in the needs of gifted children should be provided for the gifted to meet psychological and social needs.*

**Anchoring** An instructional strategy that provides meaningful and important independent activities with challenge levels ranging from remediated to accelerated in content and/or enrichment areas. Anchoring activities are used to promote “What’s next” thinking rather than “I’m done,” when students finish at different times due to differentiated instruction.

*IAG supports differentiation as a way to meet the diverse learning needs of students both within heterogeneous classes and those in which students are grouped by ability or readiness.*

**At-Risk** Students who may underachieve or who may drop out of school. Unmet economic, physical, emotional, linguistic, and/or academic needs may inhibit a student's ability to learn or attend school.

*That a gifted student may also be an at-risk student is being more widely recognized. (See also Underachieving.)*

**Authentic Assessment** Process of evaluating student learning using student products or performance instead of traditional standardized or paper and pencil tests. It allows students to be evaluated with regard to their individuality and creativity.

*IAG supports authentic assessment practices for gifted students. (See also Portfolio Assessment, one method of authentic assessment.)*

**Basic Inclusion** As used in Indiana, it refers to students randomly placed in classrooms without regard to their readiness levels, abilities, interests, and /or learning styles.

**Broad-based Planning Committee** In Indiana Administrative Code, “Broad-based planning committee” means a diverse group with representation from educators, parents, students, community members, and other stakeholders; organized for the purposes of planning and development of programs for high ability students.

*IAG encourages parents of gifted students to become members of their school district’s BBPC.*

**Checklist** A list of attributes that relate to some particular domain, such as verbal ability or mathematical talent. The person responding to the list checks off those items that are characteristic of a particular child.

A Checklist may also be used as an alternative form of assessment for evaluation of products and/or students.



**Cluster Grouping** The practice of identifying a small group of academically talented or intellectually gifted students at a grade level and placing them in the same classroom at that grade level with a teacher best-suited and qualified to work with gifted students.

*As the percentage of gifted students in a grade level or school increases, cluster grouping the gifted students into one classroom becomes beneficial to the gifted. It allows the gifted child to work during the academic day with other gifted students who share similar readiness levels and abilities.*

**Collaborative Learning** A teaching strategy whereby students are expected to share expertise and effort in order to create a common project/product.

*Gifted children need opportunities to share responses with other students of like abilities and/or interests in order to improve and extend their understandings and skills. (See also Cooperative Learning.)*

**Compliance** This term is used when the Indiana Department of Education evaluates school corporation applications for grants for high ability programs. It indicates agreement between the school corporation and state for the program components outlined in the Indiana Code and Administrative Rule 511 (Section 1 511 IAC 6-9.1). All items must be adhered to for compliance.

**Constructivism** This view of learning is based on the premise that all learners make sense of (construct) their worlds by synthesizing new experiences with what they already know and understand. Hence, students create as well as consume knowledge.

*A constructivist teacher poses meaningful, open-ended questions; uses rich, primary-source materials; and demands quality evidence of student learning. In a constructivist classroom, students are encouraged to collaborate, problem solve, and learn autonomously with work that is personally relevant.*

*The principles of constructivism should not be misused to lower standards or eliminate ability/grouping and the pursuit of individual learning.*

**Content/ Process /Product** The elements of curriculum. Content is the subject matter. Process is the activity that a teacher uses to help students make meaning out of the content included in the curriculum. Product is the output of learning or form of communication such as writing, illustrating, performing, debating, etc.

*Gifted students need differentiated content, process, and product. For optimum learning for gifted students, the product should be flexible, the content must be extended in depth and complexity, and the processes should emphasize creativity, problem solving, and critical thinking.*

**Cooperative Learning** The practice of assigning a common task and/or project to a group of students with varying ability levels often reflecting the full range of student achievement and aptitude. The purpose of such learning is to prepare students to live in a democratic society; to help them understand group membership and group dynamics; and to allow them to practice both leadership and follower skills.

*IAG supports cooperative learning in some circumstances, but cautions against misuse of the process. Misuse of the process occurs when gifted children are assigned to help others learn rather than being allowed to advance at their own faster pace. (See also Collaborative Learning.)*

**Core Curriculum** The common knowledge and skills to be learned by all students of a particular grade; reading, writing, mathematics, history-social studies, and science make up core curriculum.

*IAG believes gifted students must have opportunities that are differentiated from the core curriculum to meet their educational needs. A challenging curriculum for the gifted may require going beyond grade level expectations.*

**Creativity** The human attribute of constructive originality. It is the process of combining what exists into something new. The something new could be procedure, idea, or product relative to the individual. Creativity needs to be nurtured in students to develop the abilities necessary to affect our society with new ideas and solutions to problems.

*Fostering creativity should be part of all curricula for gifted students.*

**Critical Thinking** The development of analytical thinking for purposes of decision making. This includes using specific attitudes and skills such as analyzing arguments carefully, seeing others' points of view, and reaching sound conclusions.

*Curriculum for gifted must include opportunities to practice critical thinking in conjunction with subject matter acquisition and content mastery. (See also Content/Process/Product.)*

**Cross-Grade Grouping** Students from two or more grade levels with similar readiness levels, interests, and/or learning styles are placed together in a classroom.

*IAG supports the use of flexible grouping of students in order to better meet academic needs.*

**Curriculum Compacting** A process used to give students validation for what they already know. It allows students who demonstrate mastery to omit portions of assigned curriculum, or to move more quickly through curriculum than would be typical. Students are thus able to "buy time" which can be used to accelerate content or to pursue enrichment activities while the unit is being taught to other students.

*IAG supports the use of curriculum compacting as one means of providing appropriate programming for advanced students. It is important, however, that the "time bought" be used by students to pursue their studies in greater depth and complexity, and to further their own educational goals. Students should not be expected to use the extra time by serving as teachers' helpers, in tutoring less advanced classmates, or in doing repetitive work already mastered.*

**Differentiation** Adapting the curriculum to meet the unique needs of learners by making modifications in complexity, depth, and pacing. It may include selecting, rather than covering all, the curriculum areas dependent on the individual needs of students. In Indiana Administrative Code, "Differentiated" means providing tiered levels of services for all educational needs.

*IAG believes that curriculum should be differentiated for all students and that in all classrooms there should be multiple paths for success. The major purpose of differentiation for gifted students is to challenge the advanced learner. Contemporary educational ideas such as authentic assessment, collaborative learning, whole language, ungraded curriculum, or thematic interdisciplinary curriculum are not differentiated within themselves, but they can facilitate differentiation for the gifted.*

**Domain** As used in Indiana Code, "domain" includes the following areas of aptitude and talent: general intellectual, general creative, specific academic, technical and practical arts, visual and performing arts, interpersonal. See definitions for each of the domains in this glossary.

**Dual/Concurrent Enrollment** Students earn credit at two levels while enrolled on one course. While this is usually college credit and high school credit while enrolled in a course of study, it could also apply to receiving high school credit for a course taken while in an earlier grade.

*IAG supports dual enrollment as an option for acceleration of learning for gifted students.*

**Early Entrance** Students begin their elementary school or college education prior to the designated chronological age of entrance.

*IAG supports flexible district policies that allow for academic placement according to individual need, ability and readiness.*

**Elitist** Advocating the selection and treatment of people as superior in some way and therefore favored.

*IAG believes that promoting challenging programs for gifted students should not be equated with elitism. IAG rejects the idea that providing differentiated learning experiences to gifted students is discriminatory, or that such experiences are a means of separating the gifted from, and/or valuing the gifted above, other types of students. Good gifted programs help students not only fulfill their academic potential, but help them appreciate the contributions and diversity of others.*

**Enrichment** Activities that supplement the core curriculum. Such activities are generally not specified in the curriculum and are selected by the teacher and/or students in a given classroom.

*IAG believes that enrichment opportunities such as field trips, special speakers or demonstrations, special projects, community involvement or enrichment materials such as computers, reference materials, literature books, and arts materials should be provided for all students. Such activities or material acquisitions do not constitute a gifted program or a differentiated curriculum. Enrichment opportunities for the gifted should involve students in interaction with new ideas and topics not ordinarily included in the core curriculum. The interaction should lead to a deeper understanding of the regular curriculum, with new knowledge emerging from the students' own creative efforts. (See also Core Curriculum.)*

**Equity** Fair and impartial learning opportunities and access to good teaching for all students. In order to meet educational needs at all levels of development, these opportunities should encourage and enable all students to develop to their fullest potential.

*Equity should allow for learning experiences especially designed to meet the needs of gifted as well as other students with unique learning abilities. IAG believes challenging programs must be provided for all students. Equity in the quality of education each student receives does not mean the "outcome" or standard for each student will be the same.*

**General Creative** One of the domains of high ability as listed in Indiana Code. According to Indiana Administrative Code, “General creative” means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to activities, such as problem finding, divergent thinking, flexibility, elaboration, and originality.

**General Intellectual** One of the domains of high ability as listed in Indiana Code. According to Indiana Administrative Code, “General intellectual” means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to a broad array of disciplines.

**Gifted and Talented** There is no single definition of “gifted” or “talented.” In Indiana, each school corporation may determine the identification criteria used to determine who will participate in programs it designs to serve students of high ability.

*IAG advocates an inclusive definition of giftedness. However, all identification standards must include multiple and varied criteria and give equity to members of underrepresented populations. Student products, normed/standardized test results, student performance, and observational scales are some of the methods used in identification. Factors which may adversely affect student performance such as economic hardship or linguistic difference must also be considered. Children must be encouraged and allowed to demonstrate a wide variety of abilities and talents that traditionally are not measured by standardized tests. (See High Ability Student and Domain.)*

**Grade Skipping** Students progress through grade level instruction skipping one or more grades.

*IAG supports flexible district policies that allow for academic placement according to individual need, ability and readiness; grade skipping is sometimes an appropriate option for a gifted student.*

**Grading** The evaluation of student work by teachers; usually recorded in letter grades or in percentages.

*IAG supports grading practices for gifted students that are founded on appropriate assessment techniques and reflect student achievement in a differentiated curriculum. Comparing gifted students' work to the norm of their age or grade peers is limiting to their educational development. Grading practices should be referenced to content and performance standards.*

**Heterogeneous/Homogeneous Grouping** Grouping heterogeneously generally occurs by chronological age level and without regard for the diverse needs of students, their learning styles, or their interests. Homogeneous grouping is based on common criteria such as the students' interests, special needs, or academic abilities.

*LAG believes students should be grouped for at least some part of the educational day in an appropriate setting, based on a commonality of the students' intellectual, academic, and/or affective needs. There should be a defined educational experience in this grouping.*

**High Ability Student** In Indiana Code "high ability student" means a student who performs at, or shows the potential for performing at, an outstanding level of accomplishment in at least one (1) domain when compared to other students of the same age, experience, or environment; and is characterized by exceptional gifts, talents, motivation, or interests.

**Honors Class** Classes at the middle school/junior high or high school level in which content, pace, or depth of instruction is accelerated. Traditionally, students who meet prerequisite criteria are accepted into these courses.

*LAG believes this is one way to ensure a more challenging and differentiated curriculum. Honors classes should be available for, but not limited to, identified gifted students.*

**Independent Study or Self-Directed Study** Allowing students to follow individual or self-selected areas of interest and specific aptitude by designing and implementing their own study plans. Close monitoring by teachers is an essential component of independent study.

*Independent study is an appropriate programmatic provision for gifted learners at any level, and necessitates teacher (or other qualified adult) instruction and supervision as integral features of the program.*

**Individualization** Providing a specific program that meets the particular needs, interests, and/or abilities of an individual student for some part of his/her educational experience. It does not mean, however, that every child is working in isolation on a different level or a different subject at all times. It does mean that students are working on levels commensurate with their assessed ability, needs, and/or interests.

*LAG believes differentiation and individualization resulting from challenging activities or assignments which are interactive and open-ended in content, process, and/or product can facilitate the education of gifted learners. Individualization may also utilize mentorships, internships, independent research, and/or early college entrance programs.*

**Instructional Scaffolding** An apprenticeship approach to instruction which places the teacher in a collaborative, interactive role with students by providing carefully structured and sequenced support as they undertake new and more difficult tasks. Emphasis is on teacher modeling, extension, rephrasing, questioning, praise, and correction rather than on the teacher as evaluator.

*Instructional scaffolding is an effective instructional classroom model for classes with gifted students because it allows and encourages a shared exchange of ideas between teacher and students as students take on increasing responsibility for their own learning. The teacher plans and initiates a framework of classroom activities. The planned activities provide*

*opportunities for the students to develop their own purposes rather than simply providing responses to fit into a teacher's predetermined outcome. This methodology encourages higher order reasoning as well as basic skills learning.*

**Intelligence Quotient (I.Q.)** A measure of ability or aptitude at a given point in time, comparing children of the same chronological age. It is a test designed to measure one's potential for learning including abstract thinking and reasoning, knowledge acquisition, and problem-solving abilities. Originally it was considered to be the sole way of measuring student ability. Current thinking now accepts I.Q. as one of the many ways to measure a student's academic potential.

*IAG continues to support use of IQ tests as one effective method of identification when used with other measures or observations due to the high correlation between most schooling tasks and the cognitive tasks measured by IQ tests.*

**Interdisciplinary Curriculum** A curriculum that is structured to study a topic or concept by gathering and relating information and ideas from multiple disciplines.

*IAG believes interdisciplinary learning is one method to differentiate the core curriculum. Making connections or new relationships among disciplines enhances student understanding of the complexity of the content under study.*

**International Baccalaureate (IB)** A rigorous international pre-university course of study, leading to examinations, that meets the needs of highly motivated and academically superior secondary school students. IB has a comprehensive classics curriculum (languages, sciences, mathematics, and humanities) that allows its graduates to fulfill education requirements of various nations. Only schools approved by the IB organization may offer the program. Also, school fees are charged by the IB organization.

*IAG supports the International Baccalaureate program as a way of challenging academically gifted students in a program utilizing world-class standards. However, the costs and the approval process may make it a difficult program to implement for many school districts.*

**Interpersonal** One of the domains of high ability as listed in Indiana Code. According to Indiana Administrative Code, "Interpersonal" means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to areas, such as leadership, mediation, counseling, and communication.

**Learning Styles** A student's preference for a mode of learning and/or a type of learning environment. For example, a student could favor auditory learning in an independent learning environment.

*IAG believes students should have learning opportunities that introduce them to, and allow them to participate in, a range of multiple and varied modalities, resources, and environments.*

**Magnet School or Magnet Program** Many school districts, especially those with large student enrollments, select individual schools to emphasize particular programs or services.

Some magnet programs focus on specific learning areas such as math, science, or performing arts. Others are designed to serve a specific student population such as highly gifted or gifted and high ability students. Since space is usually limited, special entrance requirements may apply.

*LAG supports a wide variety of alternative programs so that parents and students can select the most appropriate learning environment for a given child. Schools specifically for the gifted have many advantages for teachers and gifted students.*

**Mandated Program** A legally required program or action authorized by law.

*Special Education programs are mandated; Gifted programs in Indiana are not. In order to assure gifted programs in every district, services for gifted students would have to be mandated. Without mandation, on-going advocacy is necessary in each district to initiate and to maintain gifted programs.*

**Mentor** An adult member of the community who can provide expertise and/or advice in a field of study or other community endeavor when matched with a student on a one-to-one basis.

*LAG supports mentor programs as one way to meet the needs of gifted students.*

**Multifaceted Assessment** According to Indiana Administrative Code, “Multifaceted assessment” means collecting and analyzing data to identify the educational needs of high ability students through the following: (1) Performance-based assessment, which includes evaluating the performance of students involved in complex learning opportunities through the use of instruments, such as rating scales, observation or interviews, portfolios, structured observations or interviews. (2) Potential-based assessment, which includes evaluating the potential performance of high ability students through the use of instruments, such as standardized intelligence tests, standardized achievement tests, behavior rating scales. (3) Other forms of assessment, which include using procedures designed to reduce any assessment biases that may be inherent in other assessment methods used to evaluate the levels of services needed for high ability students.

**Multiple Intelligences** The theory that intelligence can be expressed in a variety of ways and is not limited to the rational linear mode. The theory commonly associated with Howard Gardner identifies at least seven intelligences: linguistic, musical, spatial, logical-mathematical, bodily-kinesthetic, interpersonal, and intrapersonal.

*LAG advocates the continued exploration and research of intelligence in all its forms of expression to promote better understanding of human potential and service to students.*

**Nomination** A referral process for consideration of a student into a specialized program.

*The nomination process for gifted programs should allow for administrator, teacher, parent, and self-referral.*

**Non-Traditional Identification** An alternative means of identification using instruments and procedures that provide an assessment of students that is not norm-referenced or standardized.

*IAG believes that the diversity of students necessitates more varied approaches to assessing and interpreting their abilities. Traditionally, students have been identified as gifted on the basis of their general intellectual abilities (I.Q.) or specific academic aptitudes. (See also Authentic Assessment.)*

**Norm-Referenced or Standardized Test** A test used to determine an individual's status with respect to the performance of other individuals on that test. A "norm" group is the large number of examinees who have taken a particular test and whose scores form the basis of the norms. Such a test may be based on national norms, state norms, or local norms. At every level of educational test usage, it is necessary to match the scope of the test with the purpose that test is supposed to perform.

*As standardized tests are often used in the screening and identification of gifted students, IAG cautions against the misinterpretation of test results. The question to ask is, "Is the test an appropriate measure to verify a student's gifts and talents?"*

**Off-Grade Level Tests** A test one or more grade, or age, level(s) above the student's actual grade placement or age used to assess a student's ability or achievement.

*IAG supports the use of off-grade testing with students of high ability. This practice can demonstrate the student's advanced learning, can be used to determine content needed to be studied, and can be used for appropriate placement.*

**Open-Ended Question** Provides opportunities for more than one "right" solution or answer. Student response is judged by the logic by which the response is explained or defended. Students must be able to recognize tasks without a label, draw upon prior knowledge, generate relevant approaches on their own, and articulate their reasoning.

*IAG believes open-ended questions and assignments allow gifted students to respond at a more challenging level.*

**Outcome-Based Education (OBE)** The underlying principle of OBE is that decisions about curriculum and instruction should be based on desired competencies students would demonstrate at the end of their formal education.

*IAG supports the basic premise of OBE so long as high standards are maintained, gifted learners are permitted to go beyond grade level expectations, and the required demonstrations are of significant learning. Curriculum must not be limited to prescribed outcomes only.*

**Peer Grouping** A practice which indicates voluntary or assigned matching of students by shared characteristics such as age, ability, need, and/or interest in order to affect teaching and learning.

*In a group of intellectual peers, age is not a criteria for grouping. IAG supports cross-age grouping practices.*

**Portfolio Assessment** A collection of student products used to measure student progress and achievement. A collection of student products is often used to evaluate abilities to determine the appropriateness of placement in a program such as visual and performing arts. This



practice allows students to demonstrate a wide variety of abilities and talents that traditionally are not measured well by standardized tests. Material in a portfolio may be student selected. (See also Authentic Assessment.)

*IAG believes portfolio assessment is an effective way to provide a profile of the gifted learner. It more closely parallels what adults in the "real" world do to exhibit the quality of their work.*

**Problem-Based Curriculum** Problem-based curriculum is a model that enables the learner to solve a problem using knowledge and skills across the disciplines. It enables gifted students to practice critical and creative thinking while researching information and organizing ideas to solve a real-world problem.

*IAG believes that a problem-based curriculum can involve the application of strategies and the acquisition of information that stimulates the needs, interests, and abilities of gifted students.*

**Program for High Ability Students** According to Indiana Administrative Code, "Program" means educational services differentiated in depth and breadth designed to meet the needs of one (1) or more high ability students through activities, such as compacting, acceleration, enrichment, problem solving, and creative thinking.

**Pull-out Program** Students with similar readiness levels, interests, and /or learning styles are pulled from their classrooms on a regular basis to work with each other and a resource teacher to facilitate accelerated and/or enriched learning experiences.

*IAG supports the use of pull-out programs as one way to enrich or extend learning experiences for gifted students with a caution. It is appropriate if the gifted students are receiving differentiated curriculum and instruction in their core curricular areas through the pull-out experience and/or in other ways. As an occasional or limited time to receive differentiated experiences, it is insufficient as a program for gifted students.*

**Rating Scale** A scale that reports the frequency or extent to which an individual demonstrates specific actions or characteristics. Often a scale of 1 to 5 is used, or perhaps indicators such as always, sometimes, never. Rating scales may also be used as an alternative form of assessment for evaluation of products and/or students.

**Rubric** A rubric or scoring guide is an assessment scale. Each interval along the scale represents a specific level of learning from the novice to expert. The levels of learning are accompanied by specific descriptors of the type and quality of work.

*IAG believes that rubrics or scoring guides should be used to provide gifted students and their teachers with a clear understanding of what is expected as outstanding work. The highest levels of a rubric or scoring guide can be used to set goals for and define the level of performance of gifted students in a given area.*

**School Improvement Plans** According to Indiana P.L.221, all schools have a School Improvement Team which develops a School Improvement Plan. A plan, reviewed and revised annually, establishes achievement objectives of the school for a three year period.

These achievement objectives must be consistent with academic standards and include improvement in (at least) attendance, percentage of students meeting academic standards under the ISTEP program, and for a secondary school, graduation rate. *The IAG believes each plan must specifically address the learning needs of all students, including programs and services for high ability learners. IAG recommends each team include someone with training in the needs of gifted children so resulting plans will adequately address their needs.*

**School of Choice** Opportunities for parents and students to select a school of attendance. *IAG supports specialized opportunities for both inter- and intra-district student transfers to public educational institutions such as magnet, regional, residential (e.g., the Indiana Academy) or special schools.*

**Self-Contained Classroom** A programmatic term defining a homogeneous setting of students with common needs and/or abilities. The class can include multiple grades or ages. *Research has shown that this model facilitates the education of gifted students when they are also then given appropriately differentiated experiences. This classroom setting allows for differentiated curricula, including multi-disciplinarity, individualization, depth and complexity in content areas, as well as pacing that is appropriate to the gifted learner. It also provides the vital interaction among peers necessary for gifted learners.*

**Site-Based Management** A current school restructuring model by which local autonomy is given to schools for planning and decision making. Also known as school-based management. A team of educators and community members assume responsibility and accountability for all education programs in a school, striving to assist all students to reach their fullest potential. (See School Improvement Plans.) *The IAG asserts that the needs of gifted students must still be addressed in site-based management. The school's approved instructional plan MUST reflect differentiated curricular opportunities and delivery services for gifted students.*

**Specific Academic** One of the domains of high ability as listed in Indiana Code. According to Indiana Administrative Code, "Specific academic" means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to specific disciplines, such as English language arts, social studies, foreign languages, mathematics, and sciences.

**Standards** Content standards means the specific academic knowledge, skills, and abilities that all public schools in this state are expected to teach and all pupils are expected to learn in each of the core curriculum areas, at each grade level. Performance standards are standards that define various levels of competence at each grade level in each of the curriculum areas for which content standards are established. Performance standards gauge the degree to which a student has met the content standards and the degree to which a school or school district has met the content standards.

*IAG believes that schools must be prepared for gifted students to exceed content standards and have all materials and experiences pre-planned and accessible to facilitate their progress as appropriate.*

*IAG believes that while performance standards state specific performance goals, it is still necessary to incorporate modification for gifted students including advanced levels of depth, complexity, novelty, and acceleration. The inclusion of these elements in setting standards ensures that gifted students will be provided challenging learning experiences.*

**Technical and Practical Arts** One of the domains of high ability as listed in Indiana Code. According to Indiana Administrative Code, “Technical and practical arts” means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to disciplines, such as vocational-technical education, business technology education, family and consumer sciences, and technology education.

**Thematic Curriculum** A curriculum which focuses on the study of a topic or concept that is specific, such as "animals," or global, such as "change." The theme serves as an organizing element to provide continuity and "connectedness" for learning.

*IAG believes a thematic curriculum that is defined, focused and appropriately differentiated can allow for continuous in-depth learning for gifted students.*

**Tiering** Providing assignments varying in level of complexity/challenge while focusing on the same basic concept or learning experience. This is a type of differentiation.

*IAG supports differentiation as a way to meet the diverse learning needs of students both within heterogeneous classes and those in which students are grouped by ability or readiness.*

**Tracking** Fixed groups that are rigidly maintained over time. This word is NOT synonymous with grouping and does not preclude opportunities for special needs groups for any learner at some time.

*IAG's position is that no child should be "locked into" an on-going educational program that perceives and instructs him/her in only one aspect of his/her dimensionality.*

**Underachieving** A discrepancy between recognized potential and actual academic performance. The causes of underachievement may be social, emotional, physical, and/or academic.

*IAG's position is that a good program serves all of its gifted students, not just those who are achieving. Inappropriate curriculum often has as its consequence the underachieving gifted. Special counseling for underachieving gifted may constitute an appropriate learning opportunity.*

**Visual and Performing Arts** One of the domains of high ability as listed in Indiana Code. According to Indiana Administrative Code, “Visual and performing arts” means understanding facts and concepts, developing skills and generalizations, and evaluating their relationships as they apply to disciplines, such as art, dance, music, and theater arts.